Staff Report for Resolution No. R3-2013-0032
ATTACHMENT 4

PUBLIC COMMENTS RECEIVED ON
APRIL 8, 2013 DRAFT RESOLUTION NO. R3-2013-0032
AND CENTRAL COAST WATER BOARD STAFF RESPONSE

Central Coast Water Board staff received comments from:

Central Coast Water Board staff responses to these comments are provided below. All comments are transcriptions from the letters containing them. Transcriptions do not include the entire content of the comment letter as some content is non-substantive (e.g., salutations, contact information, citations) or is redundant. See Attachment 3 of the Staff Report for complete copies of all comment letters.

■ Atascadero - 1
The City agrees with and incorporates by reference, the comment letter from CASQA… Specifically, we encourage the Water Board to include the following bolded language in Attachment 1, Page 8, Section B.4.d.vi: " ... or) hydrologic analysis and sizing methods, equally effective in optimizing onsite retention of the runoff **to *match pre-development hydrology*** generated by the rainfall event specified in Section B.4.c that have been approved by the Central Coast Water Board Executive Officer ... "

City staff believes this is a reasonable request since matching pre-development hydrology would maintain watershed function and therefore protect receiving water quality.

Staff Response to Comment Atascadero - 1
See Staff Response to Comment CASQA – 6.

■ **Atascadero - 2**
Second, the City agrees with CASQA that Performance Measure Number 4 (page 10) should be removed from the requirements. Removing Performance Measure 4 is reasonable since the Requirements already require infiltration of the 95% storm event. The Requirements make the case that infiltrating the 95% storm will maintain the dominant watershed processes. If this is already achieved by on projects with 15,000 square feet of impervious surface, it would already be achieved on projects with 22,500 square feet and peak matching would not be needed.

Staff Response to Comment Atascadero - 2
See Staff Response to Comment CASQA – 7.

■ **Atascadero - 3**
The City of Atascadero requests that the Water Board provide an additional year from the adoption of these requirements for implementation. The main argument against this request has been that municipalities have had years to prepare their citizens and Council members, and draft code modifications. However, most of the technical requirements were issued only late last spring. Up to that point, municipalities like us were looking at a black box with no background technical information. While municipalities did ask for and receive an additional few months last spring, that was not enough time to fully vet the technical requirements of implementation.

An example of why additional time is needed has already come to light. The multiplier of 1.963 used in Structural Stormwater Control Measure Sizing is overly conservative and has been replaced by a multiplier of 1.2. This may seem insignificant, but this could mean the difference between having a project move forward or stopping. If a project is stopped based on overly conservative requirements, then other project benefits could be missed like, riparian restoration, wetland restoration, jobs, transit stops, bike lanes and many other beneficial outcomes.

Please consider the large amount of municipal resources and time that is required to implement this program. Page 16 outlines requirements for program tracking and specifically the development of an O&M tracking database. The City currently has no financial resources to develop such a system. Therefore, the City will need the time to figure out how to effectively and inexpensively develop the system, and then allocate resources to implement it. Funding of storm water regulation mandates is still a major concern to the City, and the program remains a substantially unfunded State mandate.

Lastly, the State Water Board is not requiring implementation of its post-construction requirements until after July 2014. Placing the Central Coast municipalities on the same timeline would level the economic playing field and not give the State Board regulated municipalities and economic advantage over the Central Coast region.

Staff Response to Comment Atascadero - 3
Comments from Permittees propose various time frames for delaying implementation ranging from four months to a year. One comment letter (Central Coast MS4s – 1), signed by a majority of affected Permitees, requests a six-month delay. The request was supported by example schedules for preparation for PCR implementation. Central Coast Water Board staff recognizes the value in providing Permittees additional time to prepare and proposes a six-month extension of the September 6, 2013 implementation deadline for the Draft PCRs. The new proposed

deadline for implementation is March 6, 2014. Central Coast Water Board staff has revised the Draft Resolution and PCRs to reflect this extension.

A full year extension of the date to commence implementation is not justified based on the fact that a majority of Permittees are indicating readiness to commence sooner and because several past delays have already been granted. Further delay in implementation will result in further impact to water quality and beneficial uses as development projects that fail to properly mitigate these impacts are constructed. The impacts of urbanization on water quality are long-lasting, if not permanent, and are well documented in the literature. Urbanization degrades the full range of watershed processes that support beneficial uses.

■ **Carpinteria – 1**

Implementation Schedule

The Draft Resolution requires municipalities begin implementation of the PCRs to all regulated projects by September 6, 2013. This proposed schedule does not allow adequate time for municipalities to adopt enforceable mechanisms to implement the PCRs. Significant staff time and resources are required to revise and/or adopt Codes and other enforceable mechanisms, and all municipalities must follow proper public noticing procedures. The City has determined that dedicating valuable staff time and resources to approving these mechanisms while there was still uncertainty regarding design criteria in Attachment D, and other unresolved issues mentioned in this letter, would not be a practical use of public resources.

Following many hours of technical review, the Joint Effort Review Team presented proposed modifications to the Stormwater Control Measures in March. These modifications are reflected in the PCRs but have not yet been adopted by the Central Coast Regional Board. The current timeline for implementation poses several problems. In addition to adopting enforceable mechanisms, executing adequate technical guidance for both permittees and applicants by the September date would be difficult.

The City is working with the County of Santa Barbara and other Santa Barbara County agencies to develop technical guidance and implement the PCRs using a Proposition 84 grant that the County received from the State Water Resources Control Board, "Implementing the Joint Effort". The grant, awarded in July 2012 was not executed by the Water Board until April 2013. An extension of at least 4 months would allow the City, working with the County and the consultant hired to help with PCR implementation, to develop better resolution for the technical guide and complete the code adoption process. The City recommends extending the implementation date by 4 months, to take effect January 2014.

Staff Response to Comment Carpinteria – 1

See Staff Response to Comment Atascadero – 3

■ **Carpinteria – 2**

Technical Issues

The City agrees with and supports the comments submitted in the letter signed by Central Coast municipalities, including City of Carpinteria, submitted May 9, 2013. In addition to these concerns, the City has an overarching concern that the regulations have not been tested for feasibility on projects in our region. The Joint Effort was initiated with the goal of protecting watershed processes to benefit receiving waters through a scientific approach. However, the event-based runoff retention requirement lacks supporting scientific documentation as an

approach to hydromodification. The assumption by water Board staff that all Watershed Management Zones (WMZs) have the same rainfall/runoff pattern and that runoff would only occur from more than the 85th or 95th percentile storm event is surprising given the time, money, and effort put into the original technical analysis.

Staff Response to Comment Carpinteria – 2
See Staff Response to Comment CASQA – 1, 2 and 6. Central Coast Water Board staff does not assume all Watershed Management Zones have the same rainfall/runoff pattern or that runoff would only occur from storms larger than 85th and 95th percentile storms in all Watershed Management Zones. Nor do the Draft PCRs require retention of runoff in all Watershed Management Zones. The comment does not accurately characterize the Draft PCRs.

■ **Carpinteria – 3**
… the PCRs do not allow hydrologic analysis and structural Stormwater Control Measure sizing as an option for developers to match the pre-development hydrology. The language in PCRs Section [B].4.d.vi. is obviated by the language in PCRs Section 8.4.c., which mandates retention of the volume of a specific storm (85th percentile or 95th percentile) regardless of whether a specific site in its pre-development condition has highly permeable soils or impermeable soils. Continuous simulation analysis of pre- and post-project flows would allow Stormwater Control Measures to be sized so that post-project flow rates and durations would be kept within the flow rates and durations that existed pre-project or pre-development. The City recommends revising the Draft Resolution to include the use of continuous simulation modeling to match post-project flow rates and durations with pre-project flow rates and durations.

Staff Response to Comment Carpinteria - 3
See Staff Response to Comment CASQA – 6

■ **Carpinteria – 4**
Applicability
This timeline for implementation presents a challenge to both municipalities and developers in the development review process. Significant time and money has already been invested into a project design by the time the project is ready for consideration of its discretionary permits. Implementation of the new requirements should be applied to projects that have not yet had their applications deemed complete within 180 days of Water Board approval. At this early stage of a project (i.e., completeness review), it is more appropriate to ask for additional information and/or changes to a project to comply with local/state regulations. It would be unfair to require a developer to redesign a project that has already been deemed complete and is on its way toward completing its CEQA review and/or discretionary approvals for a design concept that was found to be consistent with the standards already in effect at the time of application completeness.

Staff Response to Comment Carpinteria – 4
Central Coast Water Board staff's intent with Draft PCRs Section B.1.e is to require that Permittees apply the Draft PCRs to as many projects as practical by tying the new requirements to the latest point in the planning process where a municipality can impose new requirements on a project. Central Coast Water Board staff understands that there is a point and time in the planning process when the rules and regulations to which a developer must adhere are legally set and cannot change. Some entities have argued that the "deemed complete" stage of a project application is not the most appropriate point to apply the Post-Construction Stormwater requirements. The "deemed complete" trigger is from the Permit Streamlining Act and does not

necessarily directly coincide with the most appropriate point in the development approval process to impose stormwater regulations. Also, the content of applications deemed complete is not consistent from jurisdiction to jurisdiction.

In response to comments, prior to the September 6, 2012 adoption date, Central Coast Water Board staff modified Draft PCRs Section B.1.e to allow Permittees to propose, to the Central Coast Water Board Executive Officer, a lesser application of the Draft PCRs for projects deemed complete prior to Central Coast Water Board approval of the Draft PCRs. The Central Coast Water Board Executive Officer will consider a lesser application of the Draft PCRs for projects where full application of the Draft PCRs would pose financial hardship for the project. Central Coast Water Board staff modified Section B.1.e(iii) to clarify the exemption only applies to projects that submitted a complete project application prior to September 6, 2012, but do not receive a discretionary approval by September 6, 2013. This exemption is intended to provide some relaxation of requirements for projects that have already invested substantially in project design where applying the Draft PCRs to the project would pose financial infeasibility. The Draft PCRs include this exemption because Central Coast Water Board staff recognizes the Draft PCRs were not available prior to September 6, 2012. However, between September 6, 2012 and September 6, 2013, Central Coast Water Board staff expects municipalities to make applicable project applicants aware of the Draft PCRs so applicants can plan accordingly. Therefore, applicable Regulated Projects that complete their applications after September 6, 2012, but do not receive any discretionary approvals prior to September 6, 2013, must adhere to the Draft PCRs.

■ **Carpinteria – 5**

Requiring infiltration of runoff to the extent described in the proposed regulations may have undesired consequences on local habitat landscapes that have adjusted over time to the increased water inputs afforded by urban development. For example, in the case of Carpinteria Creek, historic dry season creek flows at the point where the creek enters the City limits have diminished over the years due to drawdown from agricultural and private domestic wells in the vicinity. Within City limits, the creek receives inputs from urban runoff. While this runoff may not be clean or "natural," it does serve to help offset the reductions in creek flows from aquifer drawdown upstream. Some of this urban runoff helps to provide for year-round pools of fresh water in lower Carpinteria Creek that support sensitive species, including the Federally listed Southern Steelhead and Tidewater Goby. Carpinteria Creek is listed as critical habitat for both species; as such, any land use or regulatory decisions that would affect their habitat, such as measures to significantly reduce or alter freshwater inputs to the habitat need to be carefully considered and reviewed.

Staff Response to Comment Carpinteria – 5

The Draft Post-Construction Requirements were developed to address a broad spectrum of urban stormwater impacts, including the impacts associated with reduced infiltration of stormwater to support groundwater beneficial uses and aquatic life beneficial uses dependent on baseflow. The Technical Support Document provides a comprehensive discussion of the shift to a volume-based approach to managing urban runoff and supports the Draft Post-Construction Requirements as a means to achieve this shift, resulting in broader protections of beneficial uses impacted by urban runoff.

Central Coast Water Board staff anticipates that the modest pace of redevelopment and the limited scale of reductions in surface runoff volumes will generally limit habitat changes potentially resulting from application of the Draft PCRs. Furthermore, changes should be

positive as increased interflow and groundwater recharge have a generally positive influence on aquatic vegetation by increasing watercourse base flows over existing conditions. For example, in a Case Study of the Hydrologic Benefits of On-Site Retention in the Central Coast Region (Technical Support Document, Attachment D), under dry, summer conditions, base flows are depleted by factors ranging from 2 to 7 if no on-site retention is provided for development projects. The case study concludes: "The depletion factor is directly related to the intensity of development as indicated by the percentage of impervious surface. However, with on-site retention facilities, base flows are actually augmented over the baseline case pre-development condition. This "over mitigation" may be restorative to varying degrees in stream basins where summer base flows may have been depleted by previous development that did not implement on-site retention."

■ **Goleta – 1**

Goleta has significant concerns with the characterization of the action pending before the Central Coast Water Board as well as certain substantive provisions being proposed. As a preliminary matter, the Post-Construction Requirements presented here represent a major change in how stormwater runoff would be regulated on the Central Coast for the Phase II municipal separate storm sewer systems ("MS4s"), and is a significant departure from how other Phase II communities are being regulated throughout the rest of California. Specifically, the Post-Construction Requirements (and in particular Performance Requirement No. 3) are intended to address hydromodification concerns and are looking to ensure that new development and redevelopment projects are built in a manner to protect "watershed processes." In other words, the primary goal is to have runoff from new development and redevelopment projects match runoff from a project sites undeveloped condition. Such an objective, while admirable, is not feasible or appropriate in many circumstances due to the fact that urbanization has occurred over many decades and much of the topography has been permanently altered to accommodate urbanization.

Staff Response to Comment Goleta – 1

The primary goal of the Draft PCRs is to manage stormwater runoff, to the maximum extent practicable, to maintain watershed processes (including attenuation and/or capture of pollutant loads through chemical and biological transformations)[1] and to protect water quality and beneficial uses. In some watersheds, that may best be achieved by maintaining pre-development runoff conditions, and in those cases the Draft PCRs include requirements designed to mimic pre-development runoff conditions. These watersheds were identified by a technical team of experts applying state of the science methods to assess the physical attributes that control the movement and storage of water, sediment, pollutants, and organic matter; and the resulting conditions in downstream receiving waters. However, in every case, adjustments are available if those requirements are infeasible as the Central Coast Water Board understands that urbanized areas may not always be able to achieve pre-development conditions. For example, municipalities have the opportunity to designate heavily urbanized areas as Urban Sustainability areas, which allows for stormwater retention requirements to be adjusted. Similarly, redevelopment projects are held to a lower stormwater retention standard than "greenfield" development projects to encourage redevelopment in urbanized areas. Any project that demonstrates the stormwater retention requirements are infeasible can comply by devoting 10 percent of the project area to stormwater retention, or can do all retention offsite.

[1] See Finding 17.

The Draft PCRs fully account for situations where stormwater retention is infeasible, and provide numerous options for compliance in those situations.

■ Goleta – 2

Further, it is arguably unlawful to include hydromodification requirements in MS4 permits. The purpose and intent with respect to national pollutant discharge elimination system ("NPDES") permits is to limit the discharge of "pollutants" into waters that cause or may cause an impact to beneficial uses.[2] Hydromodification requirements are about watershed processes and flow – not pollutants. Stormwater flow is not a pollutant, and as such, the regulation of it herein through the Post-Construction Requirements contained in Draft Resolution R3-2013-0032 is unlawful.[3]

Staff Response to Comment Goleta – 2

The regulation of stormwater flow through hydromodification requirements is not unlawful, and is a necessary element of a MS4 permit. The case cited by Goleta merely states that USEPA may not regulate stormwater flow through a TMDL because it is not a pollutant; the court did not say that stormwater flow may not be regulated through a MS4 permit. Indeed, the preamble to the USEPA Phase II stormwater regulations states that for post-construction stormwater management, "consideration of the increased flow rate, velocity, and energy of storm water discharges must be taken into consideration in order to reduce the discharge of pollutants, to meet water quality standards, and to prevent the degradation of receiving streams."[4] As well, the MS4 Permit Improvement Guide written by USEPA includes an entire chapter on regulating post-construction stormwater control measures.[5] Further, an NPDES permit cannot be issued if it "cannot ensure compliance with the applicable water quality requirements of all affected States."[6] NPDES permit requirements to retain stormwater and control hydromodification are used throughout California and the United States. Therefore, since State water quality requirements include both beneficial uses and water quality objectives, once the need for a NPDES stormwater permit is triggered, the permit must address impacts resulting from increased flow rates, velocities, and energy of stormwater discharges.

In addition, control of stormwater flow and volume are directly correlated to reduction of pollutant discharges to receiving waters. Findings 14 and 18 discuss the pollutant discharge reduction benefits of stormwater flow and volume control. Pollutant discharge reductions are a primary goal of LID and stormwater retention. The fact that stormwater retention and LID provide other water quality and beneficial use benefits in addition to pollutant discharge reduction does not somehow bar requirements for their use. On the contrary, these additional benefits only serve to support their increased application. Finally, it is important to note that hydromodification itself is a pollutant discharge of sediment generated by MS4 discharges.

■ Goleta – 3

Further, the requirements presented here put the Phase II Central Coast communities at a significant disadvantage as compared to most others in California. While most of California's

[2] See, e.g. 33 U.S.C. § 402(a), NPDES permits may be issued for the "discharge of any pollutant, or combination of pollutants."

[3] See *Virginia Department of Transportation, et al. v. United States Environmental Protection Agency, et al.*, Civil Action No. 1:12-CV-775 (filed January 3, 2013 in the United States District Court for the Eastern District of Virginia).

[4] 64 FR 68761

[5] MS4 Permit Improvement Guide (2010), page 49 et seq., available at http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf.

[6] 40 CFR 122.4

municipalities are being required to apply low impact development standards (i.e., retain runoff equal to volume from 85th percentile 24-hour storm event) to development and redevelopment projects, the runoff retention performance criteria seek to have runoff from development and redevelopment projects mimic the undeveloped state of the project site – regardless of the permanent nature of altered conditions that may have occurred on the site. Goleta finds this major policy shift, and certain specific requirements contained in the Post-Construction Requirements to be problematic for both technical and legal reasons. Goleta's specific concerns are presented here.

Staff Response to Comment Goleta – 3
See Staff Response to Comment Goleta – 23

■ **Goleta – 4**

I. The Central Coast Water Board's Post-Construction Requirements Adoption Process Is Inconsistent With The Phase II General Permit

Goleta must express its concerns and frustration with the adoption process that has occurred with respect to adoption of these requirements. Generally, Central Coast Water Board staff appear to be downplaying the action pending before the Central Coast Water Board by characterizing the adoption process for the Post-Construction Requirements as simply being a readoption process for procedural reasons to ensure consistency with the State Water Resources Control Board's (State Water Board) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Phase II General Permit), adopted by the State Water Board on February 5, 2013.[7] Central Coast Water Board staff have stated that the Phase II General Permit "allows the Central Coast Water Board to readopt its Post-Construction Requirements and continue implementation of the requirements."[8] The Central Coast Water Board staff also acknowledged that Section E.12.k of the Phase II General Permit provides the basis for the Central Coast Water Board to "re-approve" the Post-Construction Requirements.[9] Section E.12.k provides:

Small MS4s subject to Section E of this Order, in place of complying with the requirements set forth in Section E.12, … shall comply with post-construction storm water management requirements based on a watershed-process approach developed by Regional Water Board that include the following:

- Completion of a comprehensive assessment of dominant watershed processes affected by urban storm water
- LID site design and runoff reduction measures, numeric runoff treatment and retention controls, and hydromodification controls that will maintain watershed processes and protect water quality and beneficial uses
- A process by which Regional Board staff will actively engage Permitees to adaptively manage requirements as determined by the assessment of watershed processes
- An annual reporting program that involves Regional Board staff and State Board staff to inform statewide watershed process based criteria

[7] Staff Report for Central Coast Water Board Meeting of March 14-15, 2013 Re: Stormwater Post-Construction Requirements (March 2013 Staff Report), p. 2; Draft Resolution No. R3-2013-0032 at p. 2, ¶ 6.
[8] March 2013 Staff Report at p. 2.
[9] Letter from Kenneth A. Harris, Jr. to Stormwater Dischargers Regarding Phase II Permit and Schedule for Implementation of Post-Construction Requirements, February 20, 2013 (Water Board February 2013 Letter), p. 2.

The regional watershed-process based approach must be approved by the Regional Water Board following a public process.[10]

The Post-Construction Requirements may only be imposed pursuant to the Phase II General Permit. As such, the Post-Construction requirements constitute new requirements, and the Central Coast Water Board cannot simply rubber stamp Resolution No. R3-2012-0025, and maintain all of its previous timelines. Accordingly, the Central Coast Water Board can only take actions that are consistent with the authority granted by the State Water Board in adopting post-construction requirements that are different than those in the Phase II General Permit. Importantly, the Central Coast Water Board must demonstrate that any region specific, watershed-based post-construction requirements have a strong technical basis, and such alternative requirements must undergo a public review process prior to adoption and implementation. As of now, based on the documents the Central Coast Water Board staff has prepared describing and purportedly supporting Resolution No. R3-2013-0032, the Central Coast Water Board will not meaningfully adhere to these requirements if the Post-Construction Requirements are adopted as is.

Staff Response to Comment Goleta – 4
The Central Coast Water Board is following all necessary requirements under the Phase II general permit. The Central Coast Water Board is considering readopting the Draft PCRs in their entirety and will follow all applicable rules regarding public process – the draft resolution was subject to public comments and there will be a public hearing on the item prior to adoption. However, it is important to note that the Central Coast Water Board previously heard and adopted the Draft PCRs, and there have only been a few changes to the Draft PCRs since that time. As such, the unprecedented public process undertaken for the first adoption of the PCRs pertains to the PCR readoption. The technical documentation for the first adoption also supports the readoption and is a part of the readoption record. The Central Coast Water Board has completed a comprehensive assessment of dominant watershed processes affected by urban storm water. The PCRs have LID site design and runoff reduction measures, numeric runoff treatment and retention controls, and hydromodification controls that will maintain watershed processes and protect water quality and beneficial uses. The Central Coast Water Board staff actively engages Permittees to adaptively manage requirements through the Joint Effort Review Team (JERT).

■ **Goleta – 5**
A. Central Coast Water Board Staff Has Mischaracterized The State Water Board's Written Statements Regarding Watershed Process-Based Post Construction Requirements

Central Coast Water Board staff has improperly characterized the State Water Board's statements in the Phase II General Permit Fact Sheet (Phase II Permit Fact Sheet) as indicating that the State Water Board "encourages full implementation of," and "supports," the Post-Construction Requirements.[11] A careful reading of the Phase II Fact Sheet reveals the State Water Board's general support for a watershed process based approach, but not specific support for, or an endorsement of, the Central Coast requirements. The State Water Board stated that "[a]fter receiving extensive public comment on Attachment J, the State Water Board determined that, while the Board continues to support a watershed process-based approach to hydromodification requirements, the Joint Effort process should be allowed to evolve and proceed, without incorporation into this Order, to address several unresolved issues

[10] Phase II General Permit at p. 62.
[11] March 2013 Staff Report at p. 2.

acknowledged by the parties to that process, including the Regional Water Board."[12] This State Water Board statement does not encourage implementation of any specific requirements, let alone the Post-Construction Requirements. At most, it encourages a locally-driven process. Also, the fact that the State Water Board recognized there are "several unresolved issues" indicates that the State Water Board did not know what post-construction requirements might evolve from a locally-driven process. Therefore, the State Water Board could not have been encouraging implementation of any specific post-construction requirements, let alone the Central Coast specific requirements.

Also, it is inappropriate to state that the State Water Board "supports" the Post-Construction Requirements. The Phase II Permit Fact Sheet states that the State Water Board "continues to support a watershed process-based approach to hydromodification requirements."[13] This statement merely indicates that the State Water Board recognizes that a watershed process-based approach could be valuable, but does not endorse any specific requirements.

The Central Coast Water Board staff has also mischaracterized the State Water Board's statements regarding future implementation of post-construction requirements in an apparent attempt to justify an urgent adoption of the requirements. Despite Central Coast Water Board staff's comments to the contrary, the State Water Board did not state that "the [Post-Construction] requirements *need* to be readopted by the Central Coast Water Board …."[14] The State Water Board did state that "Central Coast Region Small MS4s will be required to implement watershed-process based requirements" under Section E.12.k. "only after those requirements *have been reconsidered and approved* by the Central Coast Water Board."[15] This statement does not evince support for the Central Coast specific requirements. Rather, it indicates that MS4s will be required to implement "watershed-process based requirements" generally, under certain conditions. There is no reference to Central Coast specific requirements. The phrase "those requirements," modifies "watershed-process based requirements," and should not be misconstrued as referring to Central Coast specific requirements.

Moreover, the Central Coast Water Board staff has stated that the State Water Board found readoption of the Post-Construction Requirements "to be necessary."[16] This is a mischaracterization of the State Water Board's position as well. The State Water Board did not find that any specific action by the Central Coast Water Board was necessary, let alone readoption of the Post-Construction Requirements. The State Water Board simply made the point that Resolution No. R3-2012-0025 could no longer serve as the basis for the Central Coast Water Board to impose post-construction requirements because Resolution No. R3-2012-0025 required MS4s to incorporate the post-construction requirements into Storm Water Management Programs, which MS4s are no longer required to prepare under the Phase General II Permit.[17]

Further, evidence that the State Water Board did not specifically approve of the post-construction requirements adopted in Resolution No. R3-2012-0025 is provided by the fact that the State Water Board removed the Central Coast specific post-construction requirements from

[12] Phase II Permit Fact Sheet at p. 36.
[13] Phase II Permit Fact Sheet at p. 36.
[14] March 2013 Staff Report at p. 2, emphasis added.
[15] Phase II Permit Fact Sheet at p. 36, emphasis added.
[16] March 2013 Staff Report at p. 2.
[17] Phase II Permit Fact Sheet at p. 36.

the November 16, 2012 draft of the Phase II General Permit.[18] The State Water Board removed the Central Coast specific post-construction requirements to allow the local process "to address several unresolved issues acknowledged by the parties to that process, including the Regional Water Board."[19] The State Water Board's decision to remove the Central Coast specific requirements from a draft of the Phase II General Permit clearly indicates that the State Water Board did not want to take a position on the Central Coast specific requirements. Moreover, by allowing the local process to proceed, the State Water Board was relying on the Central Coast Water Board to develop any new requirements, which may or may not resemble the requirements in Resolution No. R3-2012-0025.

The evidence in the record does not support Central Coast Water Board staff assertions that the State Water Board fully supports adoption of the Central Coast specific post-construction requirements. Therefore, these assertions should not be relied on as a basis for immediately adopting the Post-Construction Requirements without a meaningful technical and public review process.

Staff Response to Comment Goleta – 5
The State Board heard extensive testimony on the Draft PCRs. At that time, the State Board had every opportunity to change the Draft PCRs or take action to halt their implementation. Instead, they expressly took unanimous action to allow the Central Coast Water Board to proceed with implementation of the Draft PCRs.

■ **Goleta – 6**
B. By Including Section E.12.k. In The Phase II General Permit, the State Water Board Did Not Specifically Endorse The Central Coast Specific Requirements

While Section E.12.k. may provide the Central Coast Water Board the authority to adopt the Post-Construction Requirements, Section E.12.k itself, does not constitute a State Water Board endorsement of the Post-Construction Requirements, as contained in Draft Resolution No. R3-2013-0032. Section E.12.k. evolved from the State Water Board's recognition that "storm water management techniques that are intended to mimic natural hydrologic functions … can protect key hydrologic processes …."[20] The State Water Board plans to "work towards developing runoff retention and hydromodification control criteria that are keyed to watershed processes."[21] Further, the State Water Board plans to delineate watershed management zones and will identify applicable areas and determine criteria for runoff retention and hydromodification that will be included in the next Phase II General Permit.[22] In the interim, the State Water Board recognized that development of such criteria can be significantly "informed" by similar regional efforts carried out by Regional Water Quality Control Boards.[23] The State Water Board included Section E.12.k. in the Phase II General Permit, as an alternative to the general post-construction requirements in Section E.12.[24] Section E.12.k. provides for a regional board to develop a specific watershed process-based approach, which may or may not be similar to the Central Coast specific post-construction requirements. As such, Section E.12.k. does not serve as an endorsement of the Central Coast specific requirements.

[18] Phase II Permit Fact Sheet at p. 36.
[19] Phase II Permit Fact Sheet at p. 36.
[20] Phase II Permit Fact Sheet at p. 35.
[21] Phase II Permit Fact Sheet at p. 35.
[22] Phase II Permit Fact Sheet at p. 35.
[23] Phase II Permit Fact Sheet at p. 35.
[24] Phase II Permit Fact Sheet at p. 35.

Importantly, even though the State Water Board ultimately included Section E.12.k. in the Phase II General Permit, State Water Board members were clearly concerned about simply leaving regional boards to develop watershed process based approaches under Section E.12.k. without any formal oversight by the State Water Board. On February 5, 2013, at the State Water Board hearing on the Phase II General Permit, after staff indicated that the State Water Board and regional boards that implement the watershed-process based approach would conduct annual reviews of the programs, Chairman Hoppin raised the issue of how the State Water Board and regional boards would annually review progress.[25] Chairman Hoppin was clearly concerned about the State Water Board and regional boards taking different paths in the development of watershed process-based approaches to post-construction requirements. After Board Member Spivey-Weber asked whether the annual review process would entail formal review by the State Water Board members, and staff responded that it would not, other State Water Board members requested that there be a more formal review process by the State Water Board.[26] Specifically, Board Member Doduc proposed that there be an annual review of the watershed-process based programs, and that it be more formal than staff originally proposed.[27] Board Member Moore also endorsed an annual State Water Board review of the watershed-based processes because the issue of post-construction requirements is important, and maintaining a public dialogue about the issues would be productive.[28] These comments indicate that the State Water Board ultimately accepted Section E.12.k. with cautious optimism. While the State Water Board members may support a watershed process-based approach, they requested a formal annual review to ensure regional boards are implementing programs consistent with the State Water Board directives and that the concerns of interested parties are being adequately addressed.

Staff Response to Comment Goleta – 6
See Staff Response to Comment Goleta – 5.

■ **Goleta – 7**

C. The Central Coast Water Board Should Extend The Date To Start Implementation Of The Post-Construction Requirements

Considering the State Water Board's action, if the Post-Construction Requirements are adopted, the Central Coast Water Board needs to extend the date on which MS4s must begin applying the Post-Construction Requirements to regulated projects. When the Central Coast Water Board adopted Resolution No. R3-2012-0025 on September 6, 2012, it provided for a one-year period to commence implementation.[29] Draft Resolution No. R3-2013-0032 retains the same date to begin implementation - September 6, 2013.[30] Assuming the Central Coast Water Board adopts Resolution No. R3-2013-0032 in July 2013, as projected, the Central Coast MS4s would only have about two months to prepare for implementation. The Central Coast Water Board staff has attempted to justify this short time frame by noting that it is only bringing two "short term actions" to the Central Coast Water Board for adoption in July 2013," and that these

[25] CD of Phase II General Permit Hearing, February 5, 2013 at 38:15.
[26] CD of Phase II General Permit Hearing, February 5, 2013 at 39:15, 41:37.
[27] CD of Phase II General Permit Hearing, February 5, 2013 at 43:45.
[28] CD of Phase II General Permit Hearing, February 5, 2013 at 48:30.
[29] Draft Resolution No. R3-2012-0025 at p. 6, ¶ 5.
[30] Draft Resolution No. R3-2013-0032 at p. 8, ¶ 5. There is an inconsistency between Resolution No. R3-2013-0032 and Attachment 1 of Resolution No. R3-2013-0032, which provides that MS4s shall apply the Post-Construction Requirements, within 365 days of the Central Coast Water Board approval of the Post-Construction Requirements, to all Regulated Projects. (Attachment 1 at p. 2, § B.4.(e).) 365 days from July 12, 2013 would be July 12, 2014.

modifications "are relatively minor."[31] One of the two actions, however, is the adoption of the Post-Construction Requirements.[32] It is hard to see how adoption of the Post-Construction Requirements in their entirety is a minor action. Considering that the requirements still contain numerous contested technical provisions, adoption of the Post-Construction Requirements is anything but minor. Because the Central Coast Water Board's proposed action for July 2013 is not minor, retaining the same implementation date of September 6, 2013 would be inappropriate.

By characterizing the proposed action in this manner, Central Coast Water Board staff are assuming that, despite the adoption of the Phase II General Permit, Central Coast MS4s have continued to prepare for implementation of the Post-Construction Requirements. Such an assumption is false for two primary reasons. First, the State Water Board's adoption of the Phase II General Permit nullified the Central Coast Water Board's previously adopted Post-Construction Requirements. Until they are re-adopted, as is required by the Phase II General Permit, such requirements are not in effect. Moreover, because of the State Water Board's action, the Central Coast MS4s had a reasonable expectation that such requirements were null and void.

Second, the staff's assumption presumes that the Central Coast Water Board will adopt the previous post-construction requirements as proposed by staff. Until the Central Coast Water Board takes action, such a presumption is inappropriate. If staff are to implement water quality requirements based on a presumption of future adoption, there would be no need for Regional Boards. Further, such a presumption undermines the intent and purpose of a public adoption process. The State Water Board is requiring that these provisions be adopted through a public process to provide stakeholders with an appropriate opportunity to voice concerns and criticism. To limit and make meaningless that opportunity directly contravenes the State Water Board's requirement and undermines stakeholder due process rights. Therefore, it is not reasonable for the Central Coast Water Board to expect that Goleta would simply continue to prepare for implementation of, as yet unadopted, Post-Construction Requirements. The Central Coast Water Board should clearly recognize that this expectation is inappropriate and should at the very least adopt a new schedule that establishes a reasonable implementation date based on the scope of any requirements imposed, and that is based on the Central Coast Water Board's actual adoption date.

Staff Response to Comment Goleta – 7

The City of Goleta has been required to prepare for PCR implementation since December 2009, and is currently required to continue preparation. The new Statewide Phase II permit is not in effect until July 1, 2013; therefore, the old Statewide Phase II permit, under which the Draft PCRs are required, remains in effect. The City of Goleta's SWMP, which is subject to the old Phase II permit and is therefore also currently in effect, requires the City of Goleta to develop enforceable mechanisms that effectively resolve regulatory conflicts and implement hydromodification controls and LID in new and redevelopment projects. Therefore, if the City of Goleta has not undertaken preparations to implement the Draft PCRs, the City may be in violation of their existing permit. Violation of an existing permit is not a reason to further delay implementation.

Since the City of Goleta has been and is still required to prepare for PCR implementation, a substantial delay is not warranted. Moreover, Central Coat Water Board staff has provided

[31] March 2013 Staff Report at p. 5.
[32] March 2013 Staff Report at p. 5.

significant resources to assist many municipalities in preparing for PCR implementation, by conducting in code revision training and developing guidance documents.

However, staff acknowledges readoption of the Draft PCRs has created some level of uncertainty for Permittees and it is occurring during the Phase II permit re-enrollment process, which requires an additional, temporary commitment of Permittees' resources. Staff also acknowledges that the Central Coast Water Board has not yet approved the Draft PCRs and the public process is ongoing. Therefore, staff is recommending that the PCR implementation due date be extended by an additional six months. See section B.1.e. of the Draft PCRs and "THEREFORE be it resolved that:" number five of the Draft Resolution for this change.

■ **Goleta – 8**

II. Proposed Post-Construction Requirements Are Flawed

As indicated previously, Goleta has significant concerns with the major policy shift that would occur with the adoption of these Post Construction Requirements. Specifically, Goleta finds it inappropriate and premature to require Central Coast MS4s to apply a hydromodification standard such as Performance Requirement No. 3 in advance of State Water Board efforts that are likely to occur to determine what is an appropriate standard for Phase II communities in general. Further, Goleta argues that the Central Coast Water Board's adoption of Performance Requirement No. 3 is unlawful for the reasons discussed in Section III, IV and V below. In addition to its overall policy and legal concerns, Goleta has significant technical concerns with many of the provisions contained in the Post-Construction Requirements. According to Draft Resolution No. R3-2013-0032, the primary objective of the Post-Construction Requirements is to maintain and restore watershed processes, which the Central Coast Water Board determined is necessary to protect water quality and beneficial uses.[33] In other words, the Post-Construction Requirements are intended to ensure generally that runoff from development and re-development sites is approximately the same as that runoff that would otherwise occur should there be no development. However, and is shown further below, Performance Requirement No. 3 exceeds such a standard in certain soils, and Performance Requirement No. 4 is unnecessary considering application of Performance Requirement No. 3. Further, the proposed "off-ramps" may be impractical, or at the very least are ambiguous.

Staff Response to Comment Goleta – 8

Any new State Board efforts to develop additional post-construction requirements are unlikely to be started in the next five years. The Fact Sheet for the new State Board Phase II permit says the State Board will develop "runoff retention and hydromodification control criteria in the next permit term that will be keyed to specific watershed processes."[34] We appreciate the State Board's intent. However, the current permit term plus the "next permit term" equals a delay of up to ten years. Also, as the commenter concedes, it is uncertain whether the statewide effort will be undertaken and completed at all. On the other hand, the Regional Board Joint Effort upon which the Central Coast Draft PCRs are based has been underway for over three and a half years and has been supported by hundreds of thousands of dollars in State Board and Regional Board public funds. The State Board allocated $600,000 of Cleanup and Abatement Account funds to develop the Central Coast PCRs. To halt the Central Coast Joint Effort and PCR implementation and wait up to ten years for a potential future statewide effort would waste years of stakeholder effort within the Central Coast Region and hundreds of thousands of

[33] Draft Resolution No. R3-2013-0032 at p. 4, ¶ 17.

[34] Fact Sheet for NPDES General Permit and Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems – Order No. 3013-0001-DWQ, p. 19.

dollars of public funds. In addition, stopping the Draft PCRs in such a fashion would significantly impact water quality and beneficial uses. During any delay, development projects would proceed without incorporation of adequate stormwater control measures. Once such projects are built, future incorporation of effective stormwater control measures into such projects is unlikely. This will result in continued and long-term impacts to receiving waters.

■ Goleta – 9

A. The 95th Percentile Runoff Retention Requirements Result In Oversized BMPs For Certain Soils

Application of criteria in Performance Requirement No. 3 vary based on the identified watershed management zone ("WMZ") for the area in question. All of Goleta is considered to be in WMZ 1.[35] For WMZ 1, the runoff retention requirement is as follows: "Retain 95th Percentile Rainfall Event – Prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data. [] Compliance must be achieved via infiltration."[36] Performance Requirement No. 3 assumes in general that the volume that would be required to be retained "appears to best represent the volume that is fully infiltrated in a natural condition and thus should be managed onsite to maintain th[e] pre-development hydrology for duration, rate and volume of stormwater flows."[37] Considering this intent, it is possible to assess the value of the proposed Post-Construction Requirements by comparing the stormwater control measure size necessary to retain the 95th percentile 24-hour storm event per the sizing requirements in the Draft Resolution R3-2013-0032 to the stormwater control measure size necessary to match undeveloped runoff from a site. These comparisons are best made by accounting for site-specific factors such as soil type.[38] For example, Sixty-four (64) percent of soils within Goleta's jurisdiction are Hydrologic Soil Group (HSG) D soils.[39] HSG D soils are "very slow" infiltrative soils.[40]

As indicated in the attached Geosyntec Memorandum, Performance Requirement No. 3 for type D soils results in oversized stormwater control measures, and thus its application to type D soils is inconsistent with the Central Coast Water Board staff's intent and purpose with respect to the requirement. Further, oversized control measures provide no additional environmental benefit. Thus, the cost associated with ensuring compliance with Performance Requirement No. 3, especially with respect to application to type D soils, is not justified.

Specifically, whether using the "Simple Method" or the "Routing Method," when the retention basin size required to match undeveloped discharge on type D soils is compared to the retention basin size necessary to retain the 95th percentile 24-hour event using the "Simple Method," the size of the retention facility would be about 26% larger than necessary.[41] Also, when the BMP size for the undeveloped condition on type D soils is compared to the size of the retention facility necessary for the "Routing Method" on type D soils, the retention facility would be about 40% larger than necessary.[42] As such, the proposed runoff retention provisions,

[35] Goleta has significant concerns with the gross designation of WMZs, which are discussed in part further below in this section.
[36] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 6.
[37] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 23.
[38] See Stormwater Phase II Final Rule, Federal and State-Operated MS4s: Program Implementation, EPA 833-F-00-012 (Dec. 2005), p. 2, emphasis added.
[39] Memorandum from Geosyntec to City of Goleta regarding Post-Construction Management Requirements (May 8, 2013) at p. 2, and Figure 2 (Geosyntec Memorandum), attached as Exhibit A.
[40] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 27; Stormwater Control Measure Sizing: Evaluation of Attachment D to the Central Coast Requirements (April 8, 2013) (SCM Sizing Report), p. 5, Table 3.
[41] Geosyntec Memorandum at p. 5, and Figure 4.
[42] Geosyntec Memorandum at p. 5, and Figure 4

especially as applied to type D soils, results in post-development standards that far exceed the undeveloped condition, which is alleged to be the primary intent behind Performance Requirement No. 3. Accordingly, Performance Requirement No. 3 is inappropriate as applied to HSD D soils. Because of this impractical application, Goleta recommends that, at the very least, Performance Requirement No. 3 be revised to specifically exclude application to HSG D soils.

[From Goleta Comment Letter Exhibit A]
2.4 Model Output
Existing condition model outputs (immediate infiltration, runoff, and evapotranspiration (ET) were compared to these parameters in the developed condition models. The Stormwater Control Measure size necessary to match the discharge from the undeveloped condition was determined and compared to the Stormwater Control Measure sizes required by the draft Resolution.
3. RESULTS
3.1 Effectiveness of 95th Percentile Storm Event Sizing
From the continuous models it was determined that a bioinfiltration facility size of 1.51 watershed-inches was required to match the runoff volume from undeveloped condition with D soils (Figure 3). This size is compared to the BMP sizes computed using the simple and routing methods using the 95th percentile rainfall depths (Figure 3). Both sizing methodologies using the 95th percentile storm event result in a bioinfiltration facility that is oversized in that it results in less runoff from the site than would occur in the undeveloped condition….This calculation resulted in bioinfiltration facility sizing that is 26 percent and 40 percent larger than necessary for the 95th percentile simple method and 95th percentile routing method, respectively (Figure 4). Therefore the two 95th percentile sizing alternatives in D soils in WMZ 1 result in a bioinfiltration facility that is oversized.

Staff Response to Comment Goleta – 9
Central Coast Water Board staff anticipates the occurrence of oversizing retention facilities to be very infrequent because the Draft PCRs allow for ample reductions of retention volumes generated by the 85th and 95th percentile 24-hr rain events. For example, the Draft PCRs allow reductions of required retention volumes by requiring only 50 percent of runoff from replaced surfaces to be retained. This results in smaller retention facilities potentially undersized for matching actual predevelopment conditions. In designated Urban Sustainability Areas, retention requirements for replaced impervious surfaces are further reduced to that of the pre-project condition. Additionally, where technical infeasibility of retaining the full retention volume on a particular site is demonstrated, a regulated project can instead dedicate ten percent of its equivalent impervious surface area to retention-based structural control measures, or pursue off-site mitigation.

While oversizing a facility may happen occasionally, preventing it in all cases is likely unachievable. Even using a sophisticated approach like continuous simulation modeling to estimate predevelopment conditions would result in some facilities being oversized (and some undersized). The potential for oversizing facilities also lacks relevance in the context of applying post-construction requirements that provide reasonable flexibility to achieve the Maximum Extent Practicable standard.

The proxy condition – surface runoff is generally not produced in response to rain events the size of the 85th or 95th 24-hr event – is applied throughout an entire Watershed Management Zone based on the actual characteristics of the whole Watershed Management Zone. Central

Coast Water Board staff acknowledges that variability exists within each Watershed Management Zone, and accounts for that variability by allowing for adjustments in the application of the requirements at the site level. A variety of adjustments for individual sites within the Watershed Management Zone are allowed based on conditions at a particular site, which staff recognizes will vary based on such factors as soil type.

Central Coast Water Board staff finds that continuous simulation analysis of predevelopment hydrologic conditions at an individual site, such as the analysis conducted to support the comment, is itself an estimation of predevelopment condition, and is not a satisfactory substitute for the proxy condition. Staff bases this finding on the following:

- Absent an agreed upon set of input variables, individual modelers are left to their professional opinion as to what values to use for important variables such as depression storage, evapotranspiration, and soil infiltration rate. The extent to which the selected variables reflect actual predevelopment conditions directly determines the accuracy of the model results. This results in considerable uncertainty in the results of continuous simulation models and depends on who builds and operates the model. For example, the analysis conducted in support of the comment appears to have identified three components of discharge: surface flow, evapotranspiration, and infiltration (Section 2.4 Model Output). A forth component, interflow, which can account for a substantial portion of subsurface flow, was apparently not considered. Including interflow in the model may have resulted in lower estimates of total surface runoff volume for the predevelopment condition. Similarly, the analysis selected zero inches of depression storage for the predevelopment condition. While this may be appropriate given the sensitivity of the model to a range of depression storage inputs, it ignores the fact that depression storage can provide measurable runoff storage under natural conditions owing to the natural topography of a site. The fact that the model is not sensitive to this very real condition, further illustrates how the model functions to provide only an estimate of predevelopment condition.

- The absence of data on reference conditions for use in calibrating a model results in greater uncertainty surrounding the estimate of predevelopment conditions. As discussed in Staff Response to Comment CASQA – 6, reference conditions are important in calibrating continuous simulation models, yet suitable data on reference conditions may not be available.

- Applied to individual sites, continuous simulation modeling could potentially indicate the proxy does not accurately reflect variations in the predevelopment hydrologic response of every individual site in a Watershed Management Zone. However, this variability, which we already know exists among individual sites within a Watershed Management Zone, is adequately accommodated for by the various adjustments in how the Draft PCRs are applied.

Central Coast Water Board staff finds in the Central Coast Region, consistent and well calibrated application of continuous simulation modeling is virtually impossible to ensure at this time. As continuous simulation modeling would be applied to characterize individual site predevelopment condition, staff believes its potential to accurately depict predevelopment conditions is not substantially greater than its potential to inaccurately depict these conditions. Results with poor accuracy could potentially lead to structural Stormwater Control Measures undersized for retaining runoff. Stated differently, the occasional oversizing of a retention facility sized to meet the proxy condition is preferred to the more frequent undersizing of facilities resulting from poor estimates of predevelopment condition derived from continuous simulation modeling.

Finally, it is important to point out that Central Coast Water Board staff received numerous comments on earlier proposals of Post-Construction Requirements related to the requirement for projects greater than or equal to 22,500 square feet to use a calibrated continuous simulation hydrologic model to determine runoff volume and size facilities for managing it. The commenters explained that continuous simulation hydrologic modeling would be very challenging and cost-prohibitive for the Regulated Project applicant. In response to comments, Central Coast Water Board staff modified the Draft PCRs to include an event-based approach (included in Draft PCRs, Attachment D) as an alternative to using continuous simulation hydrologic modeling. Central Coast Water Board staff provides this alternative to make it more cost-effective and efficient for projects to calculate the retention volume. Central Coast Water Board staff developed Attachment D in collaboration with stakeholders. The Draft PCRs still provide the option to use continuous simulation hydrologic modeling to size retention facilities, but not to estimate predevelopment retention.

Central Coast Water Board staff finds the proposed approach in the Draft PCRs achieves the appropriate balance at this time in the Central Coast Region. That approach a) relies on a rainfall depth proxy (85th or 95th percentile 24-hr rain event), b) does not require continuous simulation modeling, c) provides a straightforward and cost-effective facility sizing method, and d) allows various adjustments based on site constraints.

Please see Staff Response to Comment Lompoc – 4 regarding the basis for Draft PCR requirement that all sites within a Watershed Management Zone pursue the runoff retention objective for that Watershed Management Zone.

■ Goleta – 10

Further, Performance Requirement No. 3 limits compliance for WMZ 1 to be achieved only through infiltration on-site.[43] Limiting compliance in this manner is overly restrictive and eliminates many best management practice options that would otherwise be available and appropriate. For example, for WMZ 2, compliance may be achieved through storage, rainwater harvesting, infiltration, and/or evapotranspiration. According to Attachment 2, the justification for this limitation as applied to WMZ 1 is because the dominant watershed process in WMZ 1 is infiltration into shallow and deeper soil layers, and that overland flow is localized and rare.[44] However, considering the gross scale of the WMZs, it is inappropriate to limit compliance to just infiltration without providing the permittees some ability or flexibility to use other stormwater control measures based on local site conditions. Moreover, the Central Coast Water Board's authority to dictate which type of management practices must be used is questionable, especially when the objective is related to groundwater recharge and not water quality.[45]

Considering the technical deficiencies with Performance Requirement No. 3 (and its legal deficiencies), Goleta recommends that Performance Requirement No. 3 be removed in its entirety. To the extent that the Central Coast Water Board decides to adopt it anyway, the

[43] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 6.
[44] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 24.
[45] Water Code section 13360 prohibits Regional Boards from dictating the "manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner." Accordingly, if the Central Coast Water Board is legally able to include hydromodification provisions and in particular provisions that are specifically designed for groundwater recharge purposes, determining how to comply with such provisions remains in the discretion of the permittee – not the Central Coast Water Board.

requirement needs to be modified significantly to provide permittees with greater flexibility to adjust compliance with the requirement as necessary considering individual site conditions.

Staff Response to Comment Goleta – 10
Compliance is not limited only to infiltration in Watershed Management Zones 1, 5 and 8; the Draft PCRs provide compliance options in Attachment D. The Draft PCR methods for sizing retention facilities (Attachment D) optimize runoff infiltration while allowing for storage of the portion of runoff that does not infiltrate. The sizing methods are allowed for meeting the retention requirements, regardless of Watershed Management Zone.

Regarding the Central Coast Water Board's authority to dictate which type of management practices must be used, the commenter misunderstands the runoff retention requirements. The runoff retention requirements are objective criteria that Permittees must require regulated project applicants to achieve in designing their management practices [i.e., structural Stormwater Control Measures, or BMPs]. The criteria are not separate Stormwater Control Measures or BMPs. The runoff retention requirements tell what magnitude of storm event the BMPs must be designed to retain or infiltrate, in order to control pollutant discharges and protect water quality and beneficial uses. They do not specify the Stormwater Control Measures or BMPs that must be employed.

■ **Goleta – 11**

A. The Ten Percent Adjustment For Sites With Technical Infeasibility Is Not Supported By Evidence In The Record, And At The Very Least is Ambiguous

Rather than specifically excluding impractical applications of Performance Requirement No. 3, the Post-Construction Requirements include alternative provisions for when compliance with the requirement may not be technically feasible. Specifically, under the terms in Attachment 1 to Draft Resolution No. R3-2013-0032, "Technical infeasibility may be caused by site conditions, including: … iii) Sites where soil types significantly limit infiltration. … v) Space constraints (e.g., infill projects, some redevelopment projects, high density development)."[46] One alternative when technical infeasibility is considered to exist is implementation of retention-based Stormwater Control Measures on ten percent of the impervious area. The alternative set at "ten percent" is arbitrary and inflexible. As discussed below, ten percent was selected as the portion of the impervious area that must be dedicated to retention-based Stormwater Control Measures because it corresponds with "landscape dedications."[47] No other justification is provided. Further, there are no proposed findings that link evidence in the record to the requirement to support an alternative set at ten percent. Accordingly, the Central Coast Water Board should reconsider the basis for this provision and, if appropriate, propose a dedication requirement with a proper evidentiary basis.

Even if the ten percent dedication provision was justified and supported by evidence in the record it is still an inflexible provision that does not account for the density of development in and around the project site. The Central Coast Water Board should, therefore, allow permittees to adjust the designated ten percent requirement based on site density. Moreover, if a BMP is still infeasible, a permittee should have the flexibility to require alternative on-site compliance measures. For example, the Ventura County Municipal Separate Storm Sewer System Permit ("Ventura MS4 Permit") provides that, when retention is technically infeasible, a project applicant may implement an alternative on-site compliance measure, which requires reducing the percentage of impervious area to no more than 30 percent of the total project area and

[46] Draft Resolution No. R3-2013-0032.
[47] Resolution No. R3-2013-0032, Attachment 2 at p. 23.

treatment of all remaining runoff.[48] Under the Ventura MS4 Permit, alternative compliance is achieved by maintaining the impervious/pervious area balance, which is a matter of site design that a project applicant can achieve in high-density areas. The Central Coast Water Board, at the very least, should consider revising the Ten Percent Adjustment provision to allow permittees flexibility in determining what is the appropriate adjustment when technical infeasibility exists.

Besides being technically inflexible, the alternative for a Regulated Project to dedicate ten percent of the impervious surface area where technical infeasibility prevents full on-site compliance with the runoff retention requirement is neither supported by the findings nor the evidence in the record. Clear articulation of "the relationships between evidence and findings and between findings and ultimate action" discloses "the analytic route the administrative agency traveled from evidence to action."[49] Resolution No. R3-2013-0032 does not contain any findings regarding the selection of ten percent as the quantity of land that must be dedicated to retention-based measures to avoid being forced to mitigate off-site. Attachment 2, which provides the rationale for the requirements outlined in Resolution No. R3-2013-0032 contains a specific finding concerning this dedication requirement, but the finding is not supported by the evidence. Attachment 2 states that the ten percent dedication requirement "provides a clear point of compliance that corresponds well with landscape dedications already required by many municipalities."[50] The Central Coast Water Board contends that the retention requirement, of which the dedication requirement is a component, has a water quality and hydromodification benefit. The Central Coast Water Board cites no such bases for the ten percent dedication requirement. Rather, the requirement is related to "landscape dedications." Thus, the evidence cited by the Central Coast Water Board is not relevant to the ten percent dedication requirement because it is not evidence indicating that the size of the dedication requirement is related to potential water quality benefits. Because the dedication requirement is not supported by the evidence, the Central Coast Water Board should reconsider the provision accordingly.

Staff Response to Comment Goleta – 11

The PCR option to dedicate ten percent of a site's Equivalent Impervious Surface Area is derived in part from typical landscape requirements, and in part from the water quality benefit of retention-based Stormwater Control Measures. The evidence in the record adequately supports the ten percent option.

The Draft Technical Support Document states that, "By establishing an upper boundary [ten percent limit] on site area dedicated to stormwater controls, this adjustment provides a clear point of compliance that corresponds well with landscape dedications already required by many municipalities." Ten percent of a site is a fairly common landscaping requirement for non-residential zones, and the percentage is typically even higher for residential zones.[51] Project applicants can leverage the required landscaping for a secondary use as stormwater management without needing to devote space exclusively to stormwater management. Central

[48] Ventura County Municipal Separate Storm Sewer System Permit, Order No. R4-2010-0108 (July 8, 2010) at p. 58.
[49] *Topanga Assn. For a Scenic Community v. County of Los Angeles* (1994) 11 Cal.3d 506, 515 (*Topanga)*
[50] Resolution No. R3-2013-0032, Attachment 2 at p. 23.
[51] For example: Arroyo Grande Multi-Family and Apartment Zones require a minimum of 35% of site area to be landscaped; Pismo Beach requires a minimum of 10% landscaping in Commercial Zoning Districts; Santa Maria requires a minimum of 15% in commercial and manufacturing districts and 20% in multi-family residential districts; Monterey County requires a minimum of 10% in high density residential, medium density residential, and light commercial zones. Source: Landscape Buffering Comparison. AHBL, Inc. (Provided to Central Coast Water Board staff by Wayne Carlson, Associate Principal on August 22, 2012.).

Coast Water Board staff added Finding number 27 to the Draft Resolution to state that in cases of technical infeasibility, the dedication of ten percent of a site's Effective Impervious Surface Area is practicable.

Findings numbers 17 and 18 of the Draft Resolution and the Draft Technical Support Document discuss the necessity of maintaining and restoring watershed processes impacted by stormwater management to protect water quality and beneficial uses by implementing LID strategies and techniques. The ten percent option requires the Regulated Project to dedicate an area equivalent to ten percent of the site's impervious area to retention-based Stormwater Control Measures. Retention-based Stormwater Control Measures support the watershed processes necessary to reduce pollutant loads and protect water quality and beneficial uses, including reduced overland flow, infiltration, interflow, and groundwater recharge, and reductions in urban pollutant discharges. Any amount of project site dedicated to these Stormwater Control Measures provides at least some of these benefits.

The ten percent can be dedicated to a variety of retention-based Stormwater Control Measures, including permeable pavement, providing considerable flexibility for the Regulated Project in how the requirement is met. The Draft PCRs provide the Permittee the discretion to determine whether retention-based Stormwater Control Measures are optimized on the ten percent. This process will lead to more likely implementation, as opposed to exceptions and exemptions being granted routinely.

Also, the ten percent option only applies if a Regulated Project's Stormwater Control Measures cannot infiltrate, evapotranspirate, or retain through storage the entire retention volume. The Draft PCRs do not require that an applicant dedicate ten percent of the site to retention-based Stormwater Control Measures if it can meet the retention requirements using a smaller footprint. Also note, if a Regulated Project demonstrates technical infeasibility and cannot dedicate ten percent of its site to retention-based Stormwater Control Measures, the Draft PCRs provide the option to mitigate offsite.

Central Coast Water Board staff recognizes that the ten percent option is a relaxation from the explicit numeric criteria required of sites that can infiltrate, evapotranspirate, or retain through storage the entire retention volume on site. During the PCR development process Central Coast Water Board staff considered requiring all projects not achieving the explicit numeric criteria onsite to mitigate offsite. However, stakeholders identified challenges typically associated with offsite mitigation. The ten percent option was proposed by dischargers engaged in the stakeholder process and is an attempt to strike a balance between practicality and water quality benefit where full retention of the design volume is not achievable. Central Coast Water Board staff finds that the ten percent option is in accordance with the MEP standard because in cases of technical infeasibility, it is practicable to at a minimum use space already dedicated to landscaping to also retain stormwater runoff.

■ Goleta – 12

Notwithstanding the fact that a ten-percent alternative is not supported by evidence in the record, the requirement itself is ambiguous. It states, in part, that "on-site retention of the full Retention Volume per Section B.4. d.vi. is not required and the Regulated Project is required to dedicate no less than ten percent of the Regulated Project's Equivalent Impervious Surface Area to retention-based Stormwater Control Measures.[52] The term "retention-based" is not defined in the draft resolution or its attachments. If the term is intended to include biofiltration,

[52] Resolution No. R3-2013-0032, Attachment 1 at p. 9.

then the ten percent alternative becomes more feasible. However, if it is intended to exclude biofiltration, then the ten percent alternative may also be technically infeasible.

Staff Response to Comment Goleta – 12

"Retention" is a conventional term used in drainage designs to indicate terminal or indefinite storage of runoff. Typically stormwater in retention facilities is released through evapotranspiration and infiltration. Because the Draft PCRs use the term "retention" in the conventional sense, Central Coast Water Board staff does not find it necessary to further define "retention-based Stormwater Control Measures" in the Draft PCRs.

Permittees will be required to exercise judgment in determining whether retention-based Stormwater Control Measures optimize retention for individual sites. For example, a lined biofiltration facility with an underdrain, designed as a flow-through system with no dead storage, would be expected to provide no protection of downstream receiving waters dependent on groundwater recharge for baseflow. The Permittee would need to consider whether such a facility truly optimizes retention in the context of the site for which it is proposed.

Central Coast Water Board Staff recognizes implementation of post-construction requirements, including retention-based Stormwater Control Measures will be a new experience for many Permittees and staff intends to continue working closely with Permittees and other stakeholders throughout implementation of the Draft PCRs to address issues of technical feasibility.

■ **Goleta – 13**

C. The Off-Site Alternative to the Runoff Retention Requirements Is Infeasible

With respect to the off-site alternative, it does not provide for a feasible alternative in Goleta's case. Draft Resolution No. R3-2013-0032 provides that "Off-site mitigation is required when Regulated Projects do not retain the full Retention Volume per Section B.4.b and B.4.c and 1) fail to demonstrate technical infeasibility of full retention, or 2) demonstrate technical infeasibility of full retention and fail to dedicate at least ten percent of the Regulated Project's Equivalent Impervious Surface Area to retention-based Stormwater Control Measures."[53]

Goleta has little open space for off-site mitigation. Most open space within Goleta's sphere of influence is protected as designated Environmentally Sensitive Habitat Areas (ESHAs) or agricultural land. On November 6, 2012, Goleta voters passed an initiative such that large open spaces zoned for agricultural use will be restricted for development through December 31, 2032.[54] These restrictions will make it virtually impossible for some project proponents to use the off-site alternative compliance provisions when the Post-Construction Requirements cannot be met on-site. Furthermore, because, off-site compliance must be achieved within the same watershed as the regulated project, unless otherwise approved by the Central Coast Water Board's Executive Officer, those project proponents that cannot find a site in Goleta may struggle to find a viable alternative.[55] As such, the off-site mitigation is an infeasible alternative.

Staff Response to Comment Goleta – 13

[53] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 9.

[54] Specifically, Goleta voters were asked whether the City of Goleta General Plan should be amended to require that for the next twenty years any changes to specified policies and designation of certain land 10 acres or more currently designated as Agriculture be required to be approved by the voters as well as the City Council. http://www.smartvoter.org/2012/11/06/ca/sba/meas/G2012/. Visited site on April 28, 2013.

[55] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 13.

A Regulated Project will most likely need to retrofit an existing site in order to improve retention in another portion of the watershed, to successfully demonstrate that the off-site project retains at least the volume of runoff calculated in Attachment F. It is unlikely that implementing a stormwater management project on an undeveloped site, as suggested by the commenter, would meet the Draft PCRs, unless the site is designed to accommodate run-on.

To mitigate off-site for Performance Requirement No. 3 (Runoff Retention), a Regulated Project must use Draft PCRs, Attachment F to calculate the volume of runoff that must be retained off-site. The Regulated Project would need to demonstrate that the off-site project retains at least the volume of runoff calculated in Attachment F. The intent of the off-site requirements is to ensure the Regulated Project will not result in a net impact to water quality and beneficial uses. Therefore, lack of readily available open space is not sufficient rationale for relaxing the off-site mitigation requirements.

Offsite mitigation projects in watersheds other than the watershed where the project impact would occur require approval of the Central Coast Water Board Executive Officer. Central Coast Water Board staff arrived at this approach in response to stakeholder comments requesting greater flexibility in securing offsite project locations. The discretion applied by the Executive Officer in reviewing such proposals is appropriate in the initial years of implementation and provides Central Coast Water Board staff an opportunity to identify and address any significant obstacles to offsite mitigation should they occur, rather than discovering them after the fact, during compliance evaluations of Permittee implementation of the Draft PCRs.

Performance Requirement No. 3 includes adjustments to the full retention requirement for various project scenarios including reduced retention volumes for redevelopment projects and a ten percent limit option for sites demonstrating technical infeasibility. Given these flexibilities, Central Coast Water Board staff finds that, in the majority of cases, on-site compliance is achievable. Therefore, off-site compliance is simply an option, in most cases, and Regulated Project applicants should be able to optimize the project site design to achieve on-site compliance.

Lastly, Central Coast Water Board staff finds that the Alternative Compliance (off-site compliance) options are indeed feasible, due to the flexibility provided for alternative compliance options. The Permittee has flexibility with project site location(s), funding arrangements, timing of project completion, etc.

■ Goleta – 14

D. Central Coast Water Board Should Expand The List of Projects Exempt From The Proposed Post-Construction Requirements Based On Project Approval Stage

Generally, the Post-Construction requirements would apply to "all applicable development projects that require approvals and/or permits issued under the Permittee's planning, building, or other comparable authority."[56] Specifically, the proposed Post-Construction Requirements would apply to projects that have not received the first discretionary approval of project design.[57] This limited exemption could unfairly derail projects where significant investments have been made and project proponents have acquired vested development rights.

[56] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 1.
[57] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 3.

Once a developer acquires a vested right to build out a development, he can do so pursuant to the conditions and regulations in place at the time of vesting, notwithstanding newly enacted ordinances that might otherwise apply to the development. In California, there are three ways to obtain a vested right. First, if a city or county changes its regulations, a property owner can still claim a vested right to build out a project under the prior land use regulations if the owner has obtained a building permit, performed substantial work, and incurred substantial liabilities in good faith reliance on the permit.[58] Second, a development agreement provides a mechanism for obtaining a vested right.[59] A development agreement (Gov. Code, § 65864 – 65869.5) "between a developer and a local government limits the power of the government to apply newly enacted ordinances to ongoing developments."[60] Finally, a vesting tentative map gives a developer a vested right to obtain all necessary building permits and discretionary approvals according to the regulations in place at the time the map is complete.[61]

Draft Resolution No. R3-2013-0032 exempts only those projects that have not yet received the "first discretionary design approval." Thus, it appears that even projects with a development agreement in place, may not be exempt. If Goleta were to try to impose new stormwater regulations on a project that is the subject of a development agreement, it could subject Goleta to challenge by the developer. Moreover, the broad category of projects that have not yet received the "first discretionary design approval, may not capture projects which have been "deemed complete for processing," projects that are the subject of a Specific Plan, and those for which the developer has completed public improvements, obtained financing and/or participated in the financing of public improvements. Were Goleta to subject projects at these stages to new stormwater regulations, it may unfairly halt projects where significant investments have been made, and limit the economic feasibility of completing the project.

The State Water Board recognized the need to apply a more reasonable standard in the Phase II General Permit. The post-construction standards of the Phase II General Permit apply to Regulated Projects, including projects "*that have not* been deemed complete for processing" and "discretionary permit projects that have not requested and received an extension of previously granted approvals."[62] The Central Coast Water Board should follow the lead of the State Water Board, and in addition to exempting projects that have acquired a project design approval, exempt discretionary projects "deemed complete for processing," and those for which a vesting tentative map has been issued.[63] Further, to protect the vested rights of those with development agreements in place, the Central Coast Water Board should exempt those projects subject to development agreements. Goleta also requests that the Central Coast Water Board exempt projects that are the subject of a Specific Plan, and those for which a developer has completed public improvements, obtained financing, and/or participated in the financing of public improvements; or which requires the private party to reimburse the local agency for public improvements upon the development of such a private project. By providing these exemptions, applicants that have acquired vested rights, or made other substantial investments and progress

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[58] *Avco Community Developers, Inc. v. South Coast Regional Com.* (1976) 17 Cal.3d 785, 791.

[59] Gov. Code, § 65866; *City of West Hollywood v. Beverly Towers* (1991) 52 Cal.3d 1184, 1194 (*City of West Hollywood*).

[60] *City of West Hollywood*, *supra*, 52 Cal.3d at p. 1193, n. 6.

[61] Gov. Code, § 66498.1; *City of West Hollywood*, *supra*, 52 Cal.3d at p. 1193, n. 6.

[62] Phase II General Permit at p. 51.

[63] The Central Coast Water Board's proposed exemption for projects with a "completed project application" is an inadequate alternative. By requiring an MS4 to apply for this exemption and show "financial infeasibility," such a request is left to the discretion of the Central Coast Water Board's Executive Officer, and it is based on a vague standard. Goleta requests that this exemption be clearly articulated and not be subject to further decision making by staff.

in the application process would not be required to redesign their proposed projects, at potentially considerable expense. Moreover, such an exemption would relieve Goleta from being in the untenable position of defending itself from a legal challenge (e.g., claims of a taking) by a developer with a vested right to develop under prior regulations.

Staff Response to Comment Goleta – 14
Regarding the commenter's suggestion to use the "deemed complete" stage in the development review process to dictate which projects should be subject to the Draft PCRs, see Staff Response to Comment Carpinteria – 4.

Also, regarding the commenter's suggestion to exempt projects that have completed public improvements, obtained financing, etc. see Staff Response to Comment Carpinteria – 4 which discusses potential options for projects where full application of the PCRs would pose financial hardship for the project.

Draft PCRs Section B.1.e.i.(1) specifies that Permittees shall apply the Draft PCRs to all discretionary projects that have not yet received a discretionary approval by September 6, 2013. When a municipality grants vesting rights to a project it is making a discretionary approval. If a developer acquired vesting rights prior to September 6, 2013, then it has already received a discretionary approval and would therefore not be subject to the Draft PCRs. The same would apply for a project that is subject to a Specific Plan approved prior to September 6, 2013 or has entered a development agreement with the Permittee prior to September 6, 2013 that is not yet expired.

■ **Goleta – 15**
E. Performance Requirement No. 4 Should Be Deleted
Should the Central Coast Water Board adopt Performance Requirement No. 3 despite its technical and legal deficiencies, Performance Requirement No. 4 is unnecessary because implementing the retention requirements in Performance Requirement No. 3 (where feasible) provide any peak management benefit that may otherwise be attained under Performance Requirement No. 4. According to the Draft Resolution and its attachments, Performance Requirement No. 3 is intended to manage significant runoff from large storms. In doing so, this achieves the objective of Performance Requirement No. 4, which is to retain the first part of larger storms.[64] Performance Requirement No. 4 would require that post-development peak flows not exceed pre-project peak flows for the 2- through 10-yr storm events. Besides being unnecessary, implementation of Performance Requirement No. 4 would be inconsistent with the Maximum Extend Practice (MEP) standard because it would provide no additional benefit and would only impose additional costs.[65]

For example, the Central Coast Water Board's justification for Performance Requirement No. 4 notes that "[r]etaining both runoff produced by small storms and the first part of larger storms can reduce cumulative impacts of altered flow regimes on receiving water hydrology, including channel degradation and diminished baseflow."[66] However, the evidence cited by the Central Coast Water Board to support this proposition impliedly dismisses the need for Performance Requirement No. 4. The EISA Technical Guidance indicates that "'retaining all storms up to and

[64] Draft Resolution No. R3-2013-0032, Attachment 2 at pp. 23, 28.
[65] State Water Board Order No. 2003-005 DWQ at p. 9; see also Memorandum from E. Jennings, State Water Board Office of the Chief Counsel, to A. Matthews, State Water Board Division of Water Quality (Feb. 11, 1993) ("1993 Memorandum") at pp. 4-5, attached as Exhibit B.
[66] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 28.

including the 95th percentile storm event is analogous to maintaining or restoring the pre-development hydrology with respect to the volume, flow rate, duration and temperature of the runoff for most sites.'"[67] Thus, the evidence indicates that retention of the 95th percentile 24-hour event, where feasible, achieves any hydromodification benefit that Performance Requirement No. 4 is designed to achieve. Therefore, Performance Requirement No. 4 only increases costs, and provides no added water quality benefit. Accordingly, Central Coast Water Board should eliminate Performance Requirement No. 4 from Resolution No. R3-2013-0032.

Staff Response to Comment Goleta – 15
See Staff Response to Comment CASQA – 7

■ **Goleta – 16**

F. The Term "Urban Sustainability Area" Is Too Narrowly Defined

Draft Resolution No. R3-2013-0032's attempts to relax the retention requirements and provide an easier means of achieving alternative compliance are arguably meaningless because of the restrictive definition of Urban Sustainability Area. Draft Resolution No. R3-2013-0032 provides that an Urban Sustainability Area (USA) "may only encompass redevelopment in high density urban centers … that are pedestrian oriented and/or transit-oriented development projects intended to promote infill of existing urban areas." This definition may exclude many meaningful redevelopment projects in Goleta that are not in areas considered high density or pedestrian/transit oriented. Moreover, the fact that an MS4 must have its USA approved by the Central Coast Water Board's Executive Officer further limits the potential benefits associated with a USA designation under the proposed Post-Construction Requirements because approval is discretionary and subject to vague standards. The Central Coast Water Board should offer real incentives for redevelopment projects that minimize the creation of new impervious surfaces. As currently drafted, the definition of USA likely limits these opportunities.

Staff Response to Comment Goleta – 16
The purpose of the USA option for alternative compliance is not to relax retention requirements uniformly for redevelopment projects. Redevelopment projects already receive their own reductions in runoff requirements whether or not they are located in a USA. The USA option specifically targets transit-oriented and pedestrian-oriented development in high density urban centers, where a variety of environmental benefits may accrue as compared to suburban sprawl type of development. Because automobiles are a major cause of urban stormwater pollution, reduced dependency on automobiles in USAs would be a key benefit to water quality that justifies further relaxing stormwater management requirements in USAs. This reduced dependency on automobiles is not typically provided by individual redevelopment projects, but is more likely achieved on an area-wide scale where urban planners establish specific goals for public transportation and pedestrian-oriented development.

Central Coast Water Board staff recognizes the need for further refinement of the specific parameters and thresholds that define high density, transit-oriented, and pedestrian-oriented, applicable to the Central Coast Region. For this reason, USAs are the focus of ongoing stakeholder involvement. The requirement for Central Coast Water Board Executive Officer approval of proposals to delineate USAs is appropriate given the final specifications for these proposals is expected after the adoption of Draft Resolution R3-2013-0032.

[67] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 28.

Central Coast Water Board Staff proposes the following changes to Draft PCRs Section C.3.a. to clarify the intent:
The Urban Sustainability Area ~~may only~~ shall encompass ~~redevelopment in~~ high density urban centers (but not limited to incorporated jurisdictional areas) where the Permittee's documented objective is to preserve or enhance an existing ~~that are~~ pedestrian-oriented and/or public transit-oriented ~~development projects intended to promote infill of existing urban areas~~ type of urban design through the promotion of high density redevelopment and infill. The Permittee must submit a proposal to the Central Coast Water Board Executive Officer for approval of an Urban Sustainability Area

■ Goleta – 17

G. Resolution No. R3-2013-0032 Should Provide an Exemption From The Retention And Hydromodification Requirements For Projects In Low Lying Areas That Drain Only To Non-Stream Receiving Waters

In addition to our general concerns expressed above, there are project sites where the benefits from runoff retention and peak management will not be realized because the project site sits above a high groundwater table and drains to a non-stream receiving water. The Central Coast Water Board should, at the very least, provide an exemption from the retention and peak-management requirements for projects where such conditions are present.

Resolution No. R3-2013-0032, Attachment 2 provides the basis for Performance Requirement No. 4: Peak Management. Specifically, "[p]eak management is required only in Watershed Management Zones where receiving waters (streams) are potentially impacted by hydromodification effects resulting from alterations to runoff duration, rate and volume."[68] Central Coast Water Board staff is assuming that "the Peak Management criterion, when used in combination with the Runoff Retention Requirement, will … protect[] stream channels from hydromodification impacts."[69] Also, the Central Coast Water Board is assuming that retaining runoff from small storms and the first part of larger storms "can reduce the cumulative impacts of altered flow regimes on receiving water hydrology, including channel degradation and diminished baseflow."[70] Clearly, the focus of Performance Requirement No. 4 is to protect *stream* channels. Where a project does not drain to any stream channels, it cannot have an impact on stream channels. For example, a project on land that drains to a tidally-influence slough will have no impact on *stream* channels. Imposing Performance Requirement No. 4 on such projects would be superlative. Such a requirement would run afoul of the MEP standard because such a requirement is impractical and the cost would significantly outweigh the benefit.

Staff Response to Comment Goleta – 17

Performance Requirement No. 4 requires projects creating and/or replacing more than ½ acre of impervious surface to match post-project runoff peaks to pre-project peaks for 2-yr to 10-yr events. Streams are the most common receiving water for urban stormwater discharges in the Central Coast. However, sloughs are also potentially susceptible to erosion from peak flows elevated by urban development. This potential may be increased where major disturbance of the slough and its surrounding wetland system has altered both channel structure (through channelization/straightening, construction of levees, and/or hardening), and channel processes (e.g., overbanking and inundation of adjacent wetlands; wet-dry cycle). The resulting oversimplified slough channel may be vulnerable to erosion and scour from urban peak flows, since it has become effectively decoupled from the surrounding wetlands that formerly provided

[68] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 28.
[69] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 28.
[70] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 28.

a buffer against peak flows. Performance Requirement No. 4, which simply requires that the regulated project not worsen the existing condition, is reasonably applied to sloughs in this condition.

Central Coast Water Board staff does not concur with the assertion that the requirement is impractical and that cost significantly outweigh the benefits, because flood control requirements imposed on projects by Central Coast Permittees are comparable to those of the Peak Management Performance Requirement.

■ Goleta – 18

Further, the purported benefits of the runoff retention requirement cannot be achieved on low-lying parcels, overlying a high groundwater table. The basis for Performance Requirement No. 3: Runoff Retention, is that "it will provide broad support to watershed processes, including, reduced overland flow, infiltration, interflow, and groundwater recharge …."[71] Contrary to the intent of the performance requirement, these low-lying areas do not allow for infiltration and recharge of the basin with runoff because of the high groundwater table. Moreover, there is no interflow benefit where there is a high groundwater table because there is no distinction between shallow subsurface flow and deep groundwater flow.[72]

With respect to application of the proposed off ramps, the two-potential off-ramps for a project on low-lying land, overlying a high groundwater table, and not draining to a *stream* channel, are not useful or applicable. First, while a project proponent could seek an exemption from the runoff retention requirement by claiming infeasibility, because the depth to seasonal high groundwater limits infiltration or prevents construction of subgrade stormwater control measures, the project proponent must then dedicate 10% of the impervious area to retention-based control measures.[73] It appears that retention-based control measures, however, are designed to maximize infiltration of runoff, which is not possible in the case of a site with a high groundwater table.[74] Therefore, this off-ramp provides no benefit.

The other potential off-ramp for such a project might be found in Performance Requirement No. 5: Special Circumstances. Such a project may qualify as a "Highly Altered Stream Channel Special Circumstance" or a "Historic Lake and Wetland Special Circumstance," but the exemption is not available for even a moderately sized project. For a Highly Altered Channel Special Circumstance project creating and/or replacing ≥22,500 square feet, the project proponent must implement Performance Requirement Nos. 2 and 3. As explained above, Performance Requirement No. 3 is infeasible on such lands. As such, these special circumstance exemptions provide no benefit for moderately sized projects because project proponents will otherwise be forced to implement infeasible requirements.

Accordingly, the Central Coast Water Board should provide an exemption from Performance Requirement Nos. 3 and 4 for those projects on low-lying land that sit above a high groundwater table and do not drain to a stream channel.

Staff Response to Comment Goleta – 18

High groundwater conditions are a basis of technical infeasibility under the Draft PCRs and where such conditions can be demonstrated, the project proponent may instead dedicate 10

[71] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 23.
[72] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 5.
[73] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 9 ¶ B.4.e) and p. 14 ¶ C.1.c).
[74] Draft Resolution No. R3-2013-0032, Attachment 1 at pp. 26-27.

percent of the project's equivalent impervious surface area to retention-based structural Stormwater Control Measures. These Stormwater Control Measures are intended to provide multiple benefits including runoff treatment and volume reduction by optimizing the infiltration and/or retention of runoff as allowed by site conditions. Groundwater levels as high as five feet below ground surface are still compatible with a variety of retention-based LID Stormwater Control Measures that function to filter and evapotranspire a portion of the runoff generated by the project's impervious surfaces.

Central Coast Water Board staff does not fully understand the comment, "there is no interflow benefit where there is a high groundwater table because there is no distinction between shallow subsurface flow and deep groundwater flow." High groundwater conditions do not preclude interflow, which is simply water that travels laterally or horizontally through the vadose (unsaturated) zone during or immediately after a rain event before reaching a receiving water, which may include groundwater.

The comment fails to acknowledge that a Historic Lake and Wetland Special Circumstance is potentially applicable to projects affected by high groundwater conditions. The historic Goleta Slough may in fact qualify for this Special Circumstance, which would change the retention requirements for projects creating and/or replacing more than 15,000 square feet of impervious surface, to a detention requirement, fully exempting such projects from retention.

■ Goleta – 19

III. The Central Coast Water Board Has Failed To Make Findings Based On Evidence That Bridge the Analytic Gap Between The Evidence And The Proposed Requirements

Draft Resolution No. R3-2013-0032 proposes that the Central Coast Water Board adopt the Post-Construction Requirements "as the minimum post-construction criteria that Central Coast Traditional MS4s … must apply to applicable development and redevelopment projects in order to protect water quality and comply with the MEP standard and Phase II Municipal General Permit section E.12.k."[75] Draft Resolution No. R3-2013-0032 proposes hydromodification requirements that run afoul of state and federal law. For the reasons explained below, the Central Coast Water Board should reject the proposed Post-Construction Requirements and require Central Coast small MS4s to comply with the same Phase II General Permit requirements as all other small MS4s.

The Central Coast Water Board has characterized Resolution No. R3-2013-0032 as constituting waste discharge requirements (WDRs), and Goleta agrees.[76] The adoption of WDRs, is of course, a quasi-adjudicatory act.[77] The proposed Post-Construction Requirements are enforceable post-construction hydromodification criteria that purportedly serve to implement the

[75] Draft Resolution No. R3-2013-0032 at p. 8, ¶ 2.

[76] Finding No. 30 of Draft Resolution No. R3-2013-0032 states: "This action to adopt this Resolution is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21100 et seq.) in accordance with section 13389 of the Porter-Cologne Water Quality Control Act (Porter-Cologne, Division 7 of the California Water Code)." Water Code section 13389 provides: "Neither the state board nor the regional boards shall be required to comply with the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code *prior to the adoption of any waste discharge requirement*, except requirements for new sources as defined in the Federal Water Pollution Control Act or acts amendatory thereof or supplementary thereto." (Emphasis added.)

[77] *California Association of Sanitation Agencies v. State Water Resources Control Bd.* (2012) 208 Cal.App.4th 1438, 1462 fn. 22.

Phase II General Permit.[78] If Goleta fails to comply with such requirements, it would be subject to enforcement action for violation of the Phase II General Permit.[79]

When adopting permit requirements, the Central Coast Water Board has a duty to "set forth findings to bridge the analytic gap between the raw evidence and the ultimate decision or order."[80] This serves to "conduce the administrative body to draw legally relevant sub-conclusions supportive of its ultimate decision" and "facilitate orderly analysis and minimize the likelihood that the agency will randomly leap from evidence to conclusions."[81] As the California Supreme Court explained, clear articulation of "the relationships between evidence and findings and between findings and ultimate action" discloses "the analytic route the administrative agency traveled from evidence to action."[82] The Legislature "contemplated that the agency would reveal this route" in the findings.[83] Findings revealing the analytic route traveled by the agency must be supported by evidence in the record.[84]

The Central Coast Water Board has failed to satisfy these duties in Draft Resolution No. R3-2013-0032. The findings in Resolution No. R3-2013-0032 consist of general statements and broad conclusions related to a perceived need for post-construction hydromodification criteria.[85] The findings do not explain the basis for each Post-Construction Requirement proposed by the Central Coast Water Board or how they relate to Goleta in particular. For example, the findings do not explain how the broad-scale Water Management Zone (WMZ) designations on which the proposed Post-Construction Requirements are based account for local differences in soils, topography, and other environmental conditions. Accordingly, the findings impermissibly fail to "bridge the analytic gap between the raw evidence and the ultimate decision or order" or reveal the "analytic route the [Central Coast Water Board has] traveled from evidence to ultimate action."[86]

Resolution No. R3-2013-0032 creates substantive obligations of great significance. Nowhere does it explain or justify these specific requirements. Finding No. 13 states: "The Technical Support Document (Attachment 2) contains rationale, justification, and explanation for the Post-Construction Requirements. This information is hereby incorporated by reference." Goleta submits that incorporating a technical document cannot satisfy the requirement to serve as a bridge between the evidence and ultimate order. The Central Coast Water Board must make findings, rather than generally referring to a separate informational document.

However, assuming *arguendo* that incorporating Attachment 2 into Resolution No. R3-2013-0032 could ever satisfy the requirement to explain the basis for regulatory requirements in the findings, the findings still fall below the legal standard. Attachment 2 generally discusses the regulatory context and environmental conditions before briefly addressing the categories of the Post-Construction Requirements, rather than the many specific requirements of each category. For example, Attachment 2 does not explain why the Central Coast Water Board determined it

[78] See, e.g., Attachment 2 to Resolution No. R3-2012-0032 at p. 2 ["These Post-Construction Requirements . . . are the minimum post-construction criteria that Central Coast traditional, small MS4 stormwater dischargers must apply to applicable new development and redevelopment projects in order to comply with the MEP standard."].)
[79] See Phase II General Permit at p. 12.
[80] *Topanga, supra,* 11 Cal.3d at p. 515.
[81] *Id.* at p. 516.
[82] *Id.* at p. 515.
[83] *Ibid.*
[84] *Id.* at pp. 514-515.
[85] Draft Resolution No. R3-2013-0032, pp. 1-9, Attachment 1 at pp. 1-32.
[86] *Topanga, supra,* 11 Cal.3d at p. 515.

necessary to have small MS4s or Goleta in particular apply site design and runoff reduction performance requirements to residential properties.[87] Nor does Attachment 2 explain why 2,500 square feet was determined as the threshold for invoking such performance requirements when that amount of impervious surface is created or replaced.[88] Attachment 2 also does not explain why the square-footage thresholds for Performance Requirement Nos. 2, 3, and 4 were determined to be appropriate. Moreover, Resolution No. R3-2013-0032 does not explain how each Post-Construction Requirement comports with the MEP standard.

With regard to the requirement to retain runoff from events up to the 95th percentile 24-hour rainfall event, no findings explain how the requirement is technically or economically feasible for the localities in which it is being applied.[89] Respecting Attachment D to Attachment 1, which defines the Tributary Area as the entire project without excluding existing impervious areas that will not be replaced, Attachment 2 directs readers to an April 8, 2013 study, which evaluated stormwater control measure sizing criteria.[90] Though this study justifies the proposed basin sizing requirements to some extent, the study does not contain findings explaining how the retention requirement is technically or economically feasible.

In addition to failing to bridge the analytic gap between the evidence and specific post-construction requirements, the Central Coast Water Board is proposing regulatory requirements not supported by evidence in the record. The record is replete with references to the unnecessary and unattainable nature of many of the proposed Post-Construction Requirements.[91] The Central Coast Water Board has not adequately studied or considered the specific concerns of parties who provided comments on Draft Resolution R3-2012-0025 and its subsequent revisions. As a result, even if the Central Coast Water Board concludes the Post-Construction Requirements are addressed in findings, the findings are not supported by the evidence in the record.

Staff Response to Comment Goleta – 19
See Staff Response to Comment CASQA – 1
Goleta asserts that the technical document cannot provide justification for the Central Coast Water Board's decision and that all justification must be made in findings in order to bridge the analytical gap. The technical document is incorporated by a finding and that is sufficient to satisfy the requirements under Topanga Assn. for a Scenic Community v. County of Los Angeles, (1974) 11 Cal.3d 506. The California Supreme Court has upheld an agency's decision where references to the administrative record inform the parties and the reviewing courts of the theory upon which an agency has arrived at its ultimate finding. (Topanga Assn. for a Scenic Community v. County of Los Angeles (1989) 214 Cal.App.3d 1348, 1356-57 (citing McMillan v. American Gen. Fin. Corp. (1976) 60 Cal.App.3d 175, 184).)

■ **Goleta – 20**
IV. Adoption of Draft Resolution No. R3-2013-0032 Would Violate Water Code Sections 13263(a) And 13241 By Failing to Consider Certain Requirements Before Adopting the Resolution

[87] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 3, and Attachment 2 at p. 19.
[88] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 3, and Attachment 2 at p. 19.
[89] Draft Resolution No. R3-2013-0032, Attachment 2 at pp. 22-28.
[90] Draft Resolution No. R3-2013-0032, Attachment 2 at p. 22, and Attachment G to Attachment 2.
[91] See comment letters regarding the Joint Effort Post-Construction Requirements submitted by the City of Lompoc on June 20, 2012; the County of Santa Barbara on July 3, 2012; the City of Goleta on July 5, 2012; and the California Stormwater Quality Association on July 6, 2012.

Water Code section 13263(a) requires the Central Coast Water Board to consider the factors of Water Code section 13241 when adopting permit-based requirements more restrictive than those mandated by federal law.[92] The factors listed in Water Code section 13241 include:

(a) Past, present, and probable future beneficial uses of water.
(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
(d) Economic considerations.
(e) The need for developing housing within the region.
(f) The need to develop and use recycled water.

As explained by the Supreme Court in *Burbank*, "economic considerations" include the cost the permit holder will incur to comply with the adopted numeric pollutant restrictions.[93] Guidance from the State Water Board's Chief Counsel reaffirms that the Central Coast Water Board has an affirmative duty to consider economics and must engage in a balancing of public interest factors.[94] The Central Coast Water Board must address the Water Code section 13241 factors in the permit findings where such requirements exceed federal requirements.[95]

The objective of the proposed Post-Construction Requirements are supposedly "to ensure that the permittee is reducing pollutant discharges to the Maximum Extent Practicable and preventing stormwater discharges from causing or contributing to a violation of receiving water quality standards in all applicable development projects. …"[96] Further, the Draft Resolution claims that maintenance and restoration of watershed processes . . . is necessary to protect water quality and beneficial uses."[97] Based on these findings, the Post-Construction Requirements proposed here are apparently intended to maintain and restore watershed processes, which Central Coast Water Board staff finds is necessary to implement water quality standards. Based on the Central Coast Water Board staff's rationale, such requirements are water quality based and therefore extend beyond the mandated MEP standard.

As recognized in previous court decisions, MEP is the minimum standard and states have the discretion, but are not required, to impose more stringent requirements.[98] Because MEP is the federal mandated requirement, and because water quality based controls are imposed using discretionary authority, application of water quality based controls exceed the requirements of federal law, and are therefore subject to Water Code section 13623, and its incorporation of Water Code section 13241.

As such, the Central Coast Water Board is required to consider economics and the other public interest factors in Water Code section 13241.[99] The findings and record in this matter are devoid of evidence that the Central Coast Water Board has adequately and properly considered

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[92] *Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 626-627 (*Burbank*).
[93] *Burbank, supra*, 35 Cal.4th, p. 627.
[94] Memorandum to Regional Water Board Executive Officers and Regional Water Board Attorneys, from William R. Attwater, Chief Counsel, SWRCB, Re: Guidance on the Consideration of Economics in the Adoption of Water Quality Objectives (Jan. 4, 1994) (Attwater Memorandum) attached hereto as Exhibit C.
[95] *In the Matter of the Review on Own Motion of Waste Discharge Requirements Order No. 5-01-044 for Vacaville's Easterly Wastewater Treatment Plant*, State Board Order WQO 2002-0015 (Oct. 3, 2002), p. 35.
[96] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 1.
[97] Draft Resolution No. R3-2013-0032 at p. 4, ¶ 17.
[98] See, e.g. *Building Industry Assn. et al. v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 883; see also *Defenders of Wildlife et al. vs. Carol M. Browner* (9th Cir. 1999) 1991 F. 3d 1159, 1166-1167.
[99] Wat. Code, § 13263; *Burbank, supra,* 35 Cal.4th at p. 627.

the factors of Water Code section 13241 in its adoption of the proposed Post-Construction Requirements.

Staff Response to Comment Goleta – 20

In *City of Burbank v. State Water Resources Control Board* (2005) 35 Cal.4th 613, the California Supreme Court considered whether regional water boards must comply with section 13241 when issuing waste discharge requirements under section 13263(a) by taking into account the costs a permittee will incur in complying with the permit requirements. The Court concluded that whether it is necessary to consider such cost information "depends on whether those MS4 Discharges within the ORDER NO. R4-2012-0175 Coastal Watersheds of Los Angeles County NPDES NO. CAS004001 Attachment F – Fact Sheet F-138 restrictions meet or exceed the requirements of the federal Clean Water Act." (Id. at p. 627.) The Court ruled that regional water boards may not consider the factors in section 13241, including economics, to justify imposing pollutant restrictions that are less stringent than the applicable federal law requires. (Id. at pp. 618, 626-627 ["[Water Code s]ection 13377 specifies that [] discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act…Because section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a [] discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards"].) Therefore, California Water Code section 13241 only applies if the Draft PCRs exceed the requirements of federal law.

The Central Coast Water Board finds that the requirements in the Draft PCRs are not more stringent than the minimum federal requirements. First, the Draft PCRs do not exceed the MEP standard. Implementation of LID and stormwater retention is necessary to reduce the discharge of pollutants to the MEP. Stormwater retention can essentially reduce pollutant discharges 100 percent for those flows that are retained, thereby defining the maximum extent that pollutant discharges can be reduced. While LID and stormwater retention are effective to the maximum extent at reducing pollutant discharges, they are also practicable, as demonstrated by their implementation throughout California and the United States. The Draft PCRs provide for numerous adjustments to the baseline retention requirements to account for technical infeasibility, further demonstrating their practicability and flexibility. In terms of cost, LID and stormwater retention are not cost prohibitive, as demonstrated by USEPA, which finds LID typically reduces project capital costs and adds economic benefits to projects.[100] Clearly, LID and stormwater retention do not go beyond the MEP standard.

The Draft PCRs are not only in accordance with the MEP standard, but they are also necessary to meet the objectives and requirements of the Clean Water Act and its associated federal regulations. The Clean Water Act requires that "Permits for discharges from municipal storm sewers […] shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." At section 402(p)(6), the Clean Water Act also requires MS4s "to be regulated to protect water quality […]" In addition, the municipal stormwater permitting approach described in the Preamble to the Phase II municipal stormwater federal regulations states: "today's rule specifies that the 'compliance target' for the design and implementation of municipal stormwater control programs is 'to reduce pollutants to the

[100] USEPA, 2012. Costs of Low Impact Development. EPA 841-N-12-003C.

maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the CWA'."[101] Further, the Clean Water Act's overall objective is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. All components of the Draft PCRs are designed to meet these Clean Water Act requirements and objectives.

However, even though the Central Coast Water Board does not need to analyze costs under Water Code section 13241, the Central Coast Water Board did consider the costs associated with LID and found them reasonable. Please see Staff Response to Comment CASQA – 2.

■ **Goleta – 21**

V. Resolution No. R3-2013-0032 Would Impose Requirements On Goleta That Exceed The MEP Standard

Besides collectively being a water-quality based standard, and to the extent that the Central Coast Water Board staff claims that they are technology-based standards, the proposed Post-Construction Requirements are inconsistent with the MEP standard prescribed by the CWA, federal regulations, and State Water Board orders (including the Phase II General Permit).

Under the CWA, all MS4 permits must require controls to reduce the discharge of pollutants to the MEP. In this regard, the CWA states:

Permits for discharges from municipal storm sewers . . . shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the [permitting authority] determines appropriate for the control of such pollutants.[102]

Federal regulations and the Phase II General Permit require MS4 permittees to develop, implement, and enforce Best Management Practices (BMPs) to reduce discharges of pollutants to the MEP.[103] MS4s must develop and implement BMPs and associated measurable goals to fulfill requirements associated with the following six minimum control measures: (1) public education and outreach on storm water impacts; (2) public involvement and participation in the development and implementation activities related to the program; (3) illicit discharge detection and elimination; (4) construction and site storm water runoff control; (5) post-construction storm water management in new development and redevelopment; and (6) pollution prevention and good housekeeping for municipal operations.[104]

The MEP standard is met by implementing BMPs.[105] The federal regulations describe BMPs as "generally the most appropriate form of effluent limitations when designed to satisfy technology requirements (*including reduction of pollutants to the maximum extent practicable*) and to protect water quality."[106] The MEP standard entails an iterative process whereby the permittee reviews and improves BMPs over time.[107]

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[101] 64 FR 68753
[102] 33 U.S.C. § 1342(p)(3)(B)(iii).
[103] 40 C.F.R. § 122.34(a); Phase II General Permit at p. 10.
[104] 40 C.F.R. § 122.34; Phase II General Permit at pp. 19-62.
[105] 40 C.F.R. § 122.34(a).
[106] *Ibid.*, emphasis added.
[107] *Id.*, § 122.34(g); Phase II General Permit at p. 9; see *In the Matter of the Petitions of Building Industry Association of San Diego County and Western State Petroleum Association*, State Water Board Order WQ 2001-15 (Nov. 15, 2001), pp. 5, 7; *In the Matter of the Petitions of the Cities of Bellflower, et al., the City of Arcadia, and Western States Petroleum Association*, State Water Board Order WQ 2000-11 (July 19, 2001), pp. 3, 16.

The applicable legal authority and guidance emphasize the need to consider site-specific factors (including cost) when determining what constitutes MEP. Immediately following is a more detailed discussion of the MEP standard in this regard and Goleta's explanation for why the requirements of Draft Resolution No. R3-2013-0032 impermissibly conflict with the MEP standard.

A. The MEP Standard Is Flexible, Continually Evolves, and Requires the Consideration of Site-Specific Factors

Applicable legal authority and other guidance make clear that MEP is a flexible, evolving, and site-specific standard that involves the consideration of various factors. Such factors include public acceptance, cost versus benefits, and technical and economic feasibility. Technical feasibility may depend on local environmental conditions (e.g., soils, geography, parcel size), while economic feasibility may depend on local economic conditions.

EPA guidance states that the MEP standard "allow[s] the permitting authority and regulated MS4s *maximum flexibility* in their interpretation of it as appropriate."[108] EPA guidance emphasizes the importance of applying MEP in a flexible, site-specific manner as part of an iterative process.[109] For example, EPA guidance for small MS4s states:

This final rule requires the permittee to choose appropriate best management practices (BMPs) for each minimum control measure. In other words, EPA expects Phase II permittees to develop and update their stormwater management plans and their BMPs to fit the particular characteristics and needs of the permittee and the area served by its MS4. *Therefore the Federal or State operator of a regulated storm sewer system can take advantage of the flexibility provided by the rule to utilize the most suitable minimum control measures for its MS4.*[110]

Additional EPA guidance for small MS4s states: "Because redevelopment projects may have site constraints not found on new development sites, the Phase II Final Rule provides flexibility for implementing post-construction controls on redevelopment sites that consider these constraints."[111] Further, "[i]t is important to recognize that many BMPs are climate-specific, and not all BMPs are appropriate in every geographic area."[112] Other EPA guidance for new development and redevelopment states: "EPA recommends that the BMPs chosen: *be appropriate for the local community;* minimize water quality impacts; and *attempt* to maintain pre-development runoff conditions."[113]

Moreover, the Phase II General Permit describes MEP as "an ever-evolving, flexible, and advancing concept, *which considers technical and economic feasibility*."[114] The Phase II General Permit emphasizes the need for such flexibility and an iterative MEP process as follows:

BMP development is a dynamic process and may require changes over time as the Permittees gain experience and/or the state of the science and art progresses. To do this, the Permittees must conduct and document evaluation and assessment of each relevant element of its

[108] Storm Water Phase II Compliance Assistance Guide, EPA 833-R-00-002 (Mar. 2000), pp. 4-17, emphasis added.
[109] 64 Fed. Reg. 68722, 68732, 68755 (Dec. 8, 1999); MS4 Program Evaluation Guidance, EPA 833-R-07-003 (Jan. 2007), p. 2; Stormwater Phase II Final Rule, EPA 833-F-00-009 (Jan. 2000), p. 1.
[110] Stormwater Phase II Final Rule, Federal and State-Operated MS4s: Program Implementation, EPA 833-F-00-012 (Dec. 2005), p. 2, emphasis added.
[111] Stormwater Phase II Final Rule, Post-Construction Runoff Minimum Control Measure, EPA 833-F-00-012 (Dec. 2005), p. 2.
[112] *Ibid*.
[113] See 40 C.F.R. § 122.34(b)(5)(iii), emphasis added.
[114] Phase II General Permit at p. 10, ¶ 36.

program, and their program as a whole, and revise activities, control measures/ BMPs, and measurable goals, as necessary to meet MEP.[115]

Order No. 2003-005 DWQ explained that technical feasibility, cost, effectiveness, and public acceptance are factors used to develop BMPs that achieve MEP:
In *choosing BMPs, the major focus is on technical feasibility, but cost, effectiveness, and public acceptance are also relevant.* If a Permittee chooses only the most inexpensive BMPs, it is likely that MEP has not been met. *If a Permittee employs all applicable BMPs except those that are not technically feasible in the locality, or whose cost exceeds any benefit to be derived, it would meet the MEP standard.* MEP requires Permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs are not technically feasible, or the cost is prohibitive.[116]

The 1993 Memorandum recommends considering the following site-specific factors to determine whether a municipality would achieve MEP in a given instance:
1. Effectiveness: Will the BMP address a pollutant of concern?
2. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?
3. Public acceptance: Does the BMP have public support?
4. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?
5. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc.?[117]

Draft Resolution No. R3-2013-0032 generally agrees with this description of the MEP standard as being flexible, site-specific, adaptive, and involving the consideration of economic and technical feasibility, stating:
The maximum extent practicable (MEP) standard is an ever-evolving, flexible, and advancing concept, which considers technical and economic feasibility. As knowledge about controlling urban runoff continues to evolve, so does that which constitutes MEP. Reducing the discharge of stormwater pollutants to the MEP in order to protect beneficial uses requires review and improvement, which includes seeking new opportunities[.][118]

B. Requirements Of Resolution No. R3-2013-0032 Impermissibly Conflict With The MEP Standard

As an initial matter, nothing in the Phase II General Permit or federal regulations requires Goleta to implement the specific Post-Construction Requirements mandated by Resolution No. R3-2013-0032.[119] Nor do the federal regulations or Phase II General Permit identify hydromodification criteria as necessary or appropriate to fulfill any of the six minimum control measures that a SWMP must include.[120]

Further, as described above, the MEP standard is site-specific and a flexible concept whereby permittees review and refine BMPs over time. In this case, the Central Coast Water Board has

[115] Phase II General Permit at p. 10, ¶ 36.
[116] 1993 Memorandum at pp. 4-5, emphasis added, attached as Exhibit B.
[117] 1993 Memorandum at pp. 4-5, emphasis added, attached as Exhibit B.
[118] Draft Resolution No. R3-2013-0032 at p. 6, ¶ 26.
[119] Phase II General Permit at p. 62.
[120] Phase II General Permit at pp. 56-57.

passingly acknowledged the MEP standard, but has proposed very prescriptive requirements that apply across a region without proper regard for local economic and environmental conditions, or technical feasibility. Such requirements may be changed only through adoption of a resolution by the Central Coast Water Board. This approach is anything but flexible, amendable to evolution, or site-specific, and exceeds the MEP standard.

For the reasons provided below, the Post-Construction Requirements exceed the MEP standard because they: are not designed to address a pollutant or combination of pollutants (see Introduction above); are technically infeasible; will have costs that surpass their economic benefits and/or will be economically infeasible; and are generally and overwhelmingly unaccepted by the public.

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The new Phase II permit requires municipalities to comply with watershed process-based post-construction requirements developed by Regional Water Boards, provided the requirements and process followed include several factors. The Draft PCRs include these factors; as such, the City of Goleta must comply with the Draft PCRs upon their adoption.

Contrary to the assertion in the comment, the federal regulations do contemplate runoff flow and volume control as a critical component of stormwater programs, stating: "In many cases, consideration of the increased flow rate, velocity and energy of stormwater discharges following development unavoidably must be taken into consideration in order to reduce the discharge of pollutants."[121] This USEPA statement clearly demonstrates that runoff flow and volume control requirements are an appropriate component of a program that achieves the MEP standard.

As the commenter notes, the MEP standard is an ever-evolving, flexible, and advancing concept. This simply means that the MEP standard itself can vary between locations and can evolve and change over time. The Draft PCRs embody just such an evolution, by acknowledging the effectiveness of LID, stormwater retention, and maintenance of watershed processes in reducing pollutant discharges and protecting water quality and beneficial uses. The flexibility in the MEP concept, however, does not mean that once the MEP standard for a given time and place is identified by the permitting authority, that performance standards or other requirements enacting the MEP standard must be flexible. In fact, USEPA recommends the opposite: "First, and most importantly, permit provisions should be clear, specific, measurable, and enforceable. Permits should include specific deadlines for compliance, incorporate clear performance standards, and include measurable goals or quantifiable targets for implementation."[122] Consistent with guidance from the State Water Board, the Central Coast Water Board is determining the Draft PCRs represent the MEP standard in the Central Coast region at this time: "The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not the municipal discharger."[123] Consistent with guidance from USEPA, the Central Coast Water Board is implementing the MEP standard through the Draft PCRs' clear and measurable requirements.

Regardless of interpretation of the concept of the MEP standard, the Draft PCRs provide municipalities with ample flexibility in their implementation of the requirements. The Draft PCRs identify performance standards that give municipalities a wide range of options for compliance.

[121] 64 FR 68761
[122] USEPA, 2010. MS4 Permit Improvement Guide. EPA 833-R-10-001. P. 5-6.
[123] State Water Resources Control Board, 1993. Memorandum: Definition of Maximum Extent Practicable.

Stormwater management under the Draft PCRs can be achieved through various methods, such as evapotranspiration, infiltration, and reuse. Each of these methods can be implemented through a host of different BMPs. Further, each of these different BMPs can designed and implemented using numerous approaches. Combined, these factors provide seemingly infinite possibilities for complying with the PCR performance standards on any particular site. These possibilities for complying with the Draft PCRs provide municipalities and project proponents significant flexibility.

The Draft PCRs are expressly designed to reflect the varying environmental conditions in the region. Rather than have a single standard that applies throughout the region, various standards apply, depending on the environmental conditions within different watersheds. In this respect, the Draft PCRs are more specific to environmental conditions than most, if not all, post-construction stormwater requirements in the State. The technical support document for the Draft PCRs clearly explains how performance standards are tailored to watershed conditions. This targeting of performance standards is further augmented by adjustments that allow for site specific factors to be taken into account. For example, various adjustments are available for technical infeasibility due to site specific constraints such as soil conditions or space limitations. Redevelopment projects and projects in dense urban areas are also provided with site specific adjustments. As such, the Draft PCRs directly address the MEP standard concept of site-appropriate requirements tailored to environmental conditions.

For additional response to this comment, See Response to Comment Goleta – 20; refer to responses below addressing technical infeasibility, cost, and public acceptance.

■ **Goleta – 22**

1. The Post-Construction Requirements Are Technically Infeasible

The Post-Construction Requirements exceed MEP because they are technically infeasible. For Goleta, and presumably for other municipalities, one of the most infeasible and troubling requirements is the retention of runoff through infiltration for storms up to the 95th percentile 24-hour rainfall event. Resolution No. R3-2013-0032 acknowledges, "in some circumstances, site conditions (e.g., historical soil contamination) and the type of development (i.e., urban infill) can limit the feasibility of retaining, infiltrating, and reusing stormwater at sites."[124] This is particularly true with regard to the Goleta, which must comply with the Post-Construction Requirements for WMZs 1. Goleta's primarily Class D soils do not allow infiltration at a rate conducive to these retention/infiltration requirements. Compounding the problem is that Goleta primarily has only infill and redevelopment properties available within Goleta's sphere of influence. Based on these environmental conditions and Goleta's development history, much of Goleta would be incapable of infiltrating the 95th percentile 24-hour rainfall event.

Technical Guidance of the U.S. Environmental Protection Agency for Section 438 of the federal Energy Independence and Security Act (EISA) is the purported basis for the 95th percentile requirement.[125] The EISA guidance includes a 95th percentile retention requirement for federal facilities creating or replacing more than 5,000 square feet.[126] There is no basis to conclude (or findings in the record supporting) that this standard for federal facilities, which is backed by the resources of the federal government, is technically or economically feasible for Goleta.

[124] Draft Resolution No. R3-2013-0032 at p. 5, ¶ 20.

[125] *Method and Findings of the Joint Effort for Hydromodification Control in the Central Coast Region of California,* prepared for the Central Coast Water Board by Stillwater Sciences and Tetra Tech (June 14, 2012), p. 46. See also Draft Resolution No. R3-2013-0032, Attachment 2 at pp. 23-24, 27.

[126] *Ibid.*

Moreover, the Post-Construction Requirements do not incorporate the full text of Section 438 Technical Guidance, which lists an alternative option for compliance to perform a site-specific hydrologic analysis and provide the appropriate site-specific compliance.[127] Further, the Section 438 Technical Guidance provides for other options when retention of the 95th percentile storm event is not feasible.[128] Other options include: the use of evapotranspiration and harvesting and reuse, rather than just infiltration for areas designated as WMZ 1 and portions of WMZs 4, 7, and 10; specific conditions that can be used to justify a determination that it is not technically feasible to implement fully the criteria, and rainwater harvesting and use is not practical; and, when a determination of technical infeasibility is made, projects can be approved based on a maximum extent technically feasible versus requiring off-site compliance, regardless if off-site compliance is feasible.[129]

Under the Post-Construction Requirements, the proponent of a regulated project may undertake alternative compliance measures (Ten Percent Adjustment or off-site compliance) if the infiltration requirements cannot be met due to infeasibility.[130] With respect to the Ten Percent Adjustment, as indicated in Section II.B., the language is currently ambiguous and could be infeasible if biofiltration in such cases is not considered a "retention-based BMP." Alternative compliance refers to achieving the requirement off-site through mechanisms such as developer fee-in-lieu arrangements and/or use of regional facilities.[131] However, this alternative means compliance is also infeasible. For example, off-site compliance must occur in the same watershed.[132] For Goleta, existing development restrictions and environmental and economic constraints make this unworkable for many projects. Specifically, Goleta's General Plan includes many designated Environmentally Sensitive Habitat Areas ("ESHAs"), which preclude the use of these areas for off-site mitigation. The Post-Construction Requirements allow the Central Coast Water Board Executive Officer to approve off-site compliance projects outside the watershed, but the approval is discretionary, there are no criteria for when this approval should be given, and there is no certainty that suitable alternative lands exist or that it will be technically and economically feasible to implement a project on them.[133] In most instances, all suitable land may exist on private property.

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See Staff Response to Comment CASQA – 2 relating to technical feasibility. Also, because of the Draft PCRs' adjustment to requirements for the retention of runoff from redevelopment projects, Goleta's circumstance of having primarily infill and redevelopment properties available for development means much of Goleta would not be expected to infiltrate the full 95th percentile 24-hour rainfall event. Goleta could also potentially benefit from the Special Circumstances designation for historic wetlands, which would convert retention requirements to detention requirements in all qualifying locations. Where these adjustments for redevelopment and/or Special Circumstances are not available, the Draft PCRs provide alternative compliance

[127] *Technical Guidance On Implementing the Stormwater Runoff Requirements for Federal Projects Under Section 438 of the Energy Independence and Security Act*, EPA 841-B-09-001 (Dec. 2009), p. 12; see also California Stormwater Quality Association comment letter to Mr. Dominic Roques (July 6, 2012) (CASQA July 2012 Comment Letter), pp. 3-4.
[128] CASQA July 2012 Comment Letter at p. 4.
[129] CASQA July 2012 Comment Letter at p. 4.
[130] Draft Resolution No. R3-2013-0032, Attachment 1 at pp. 13-16.
[131] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 13.
[132] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 13.
[133] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 13.

options to dedicate 10 percent of the project's equivalent impervious surface area to retention-based structural Stormwater Control Measures, or to mitigate off-site.

Contrary to the comment that the Section 438 of the federal Energy Independence and Security Act (EISA) is the purported basis for the 95th percentile requirement, the pages of the Draft Resolution cited in the comment state: "The relative rarity of overland flow in undisturbed conditions is not unique to the Central Coast … It is in fact the basis for federal stormwater control standards promulgated by the Energy Independence and Security Act of 2007[134] (EISA) and applied throughout the United States." (Draft Resolution No. R3-2013-0032, Attachment 2 at p. 23). In other words, it is the actual conditions on the Central Coast that are the basis for the 95th percentile requirement, not the requirement's application to federal facilities (See Staff Response to CASQA Comment 1). Central Coast Water Board staff based final selection of runoff retention criteria on a robust evaluation of the wide range of criteria invoked to manage urban runoff nationwide (See Staff Response to Comment CASQA 4).

As with the Section 438 EISA requirements, the Draft PCRs provide options where infiltration of the 95th percentile event is not feasible (See Staff Response to Comment Goleta 10).

See Staff Response to Comments Goleta – 8, 10 and 12 concerning the ten percent adjustment.

Offsite mitigation projects in watersheds other than the watershed where the project impact would occur require approval of the Central Coast Water Board Executive Officer. Central Coast Water Board staff arrived at this approach in response to stakeholder comments requesting greater flexibility in securing offsite project locations. The discretion applied by the Executive Officer in reviewing such proposals is appropriate in the initial years of implementation and provides Central Coast Water Board staff an opportunity to identify and address any significant obstacles to offsite mitigation should they occur, rather than discovering them after the fact, during compliance evaluations of Permittee implementation of the Draft PCRs.

■ **Goleta – 23**

2. The Costs Of The Proposed Post-Construction Requirements Would Surpass Their Economic and Environmental Benefits And/Or The Post-Construction Requirements Are Economically Infeasible

The costs of the Post-Construction Requirements would arguably exceed their benefits, and in some cases, the costs may make the requirements economically infeasible to implement. Further, the Post-Construction Requirements come on the heels of the elimination of redevelopment funds by the state. Other than Housing and Urban Development monies, this was the only source of funding that was available to encourage beneficial redevelopment and property improvement within Goleta.

The adopted requirements would increase both the cost and complexity of development for private and public infill and redevelopment projects. For example, substantial additional costs will be incurred for engineering practices, LID materials, infiltration structures, and plan check and inspection fees. To comply with the Post-Construction Requirements on small lots, businesses may need to modify their development plans in a manner that no longer makes the

[134] USEPA, 2009. http://www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf

project feasible (e.g., eliminate parking lots or office areas), which may ultimately be considered a regulatory taking. (See section J, post.)

As a result of the additional costs represented by the Post-Construction Requirements, Goleta expects that it will have increased difficulty attracting new businesses and retaining profitable businesses; lose revenue from planning and building development fees; and lose revenue from property and sales tax. Lack of job creation from the loss of development/ redevelopment is expected to have tremendous long-term effects for Goleta. Further, affordable housing is expected to become unattainable as the cost of development consistent with the Post-Construction Requirements rises beyond that which is economically feasible, especially for a community like Goleta.

To implement the Post-Construction Requirements, Goleta would, among other things, have to revise its Storm Water Management Ordinance, planning application forms and handouts, building application forms and handouts, environmental guidelines, and improvement standards; train staff in requirements; undertake additional building and grading plan review and inspections; perform additional planning stormwater review for discretionary projects, concept plans, improvement plans, and stormwater control plan requirements; develop and adopt standards for basins and LID features; and comply with detailed verification and reporting requirements. Those actions, and the implementation and oversight of the new ordinance, would require significant staff time. Goleta simply cannot afford these additional expenses, and will be in the untenable position of having to divert money from vital public services in an attempt to cover the costs.

Accordingly, costs for meeting the proposed Post-Construction Requirement to retain runoff from storm events up to the 95th percentile 24-hour storm exceed the environmental and economic benefit to be gained. Such a requirement exceeds MEP. As indicated above, when requirements exceed MEP, the Central Coast Water Board must comply with Water Code section 13263 and consider the factors specified in Water Code section 13241, including economics.

Staff Response to Comment Goleta – 23
See Staff Response to Comment CASQA – 2 relating to economic feasibility.
See Staff Response to Comments Goleta – 20, 21 relating to MEP.

Central Coast Water Board staff has taken substantial steps to ease municipalities' administrative burden in implementing the Draft PCRs. Flow charts for the Draft Post-Construction Requirements are included in the Technical Report describing the requirements in simple terms. Development of hydromodification control criteria through the Joint Effort is itself a significant assistance to municipalities, since municipalities are typically tasked with that effort. Central Coast Water Board commissioned the development of rainfall statistics (85^{th} and 95^{th} percentile rainfall depths) and mapped them for the entire region. Central Coast Water Board staff also commissioned the development and implementation of Municipal Regulatory Update Training webinars focused on aiding municipalities with review, revision, and presentation of new and amended regulatory language for implementation of hydromodification control and LID implementation. This training provided municipalities with a Regulatory Impediment Gap Analysis Tool that guides municipalities through the process of incorporating hydromodification control and LID provisions into codes and ordinances. Also, Central Coast Water Board staff has commissioned the development of Technical Assistance Memorandums that explain critical design features of various LID approaches. Central Coast Water Board staff distributed a User's Guide for the Post-Construction Requirements to assist municipalities. In addition, the Central

Coast LID Initiative provided other assistance to municipalities. Areas of focus for this assistance include: targeted assistance with code updates; continued guidance and training for bioretention design; guidance on Stormwater Control Plans and how municipalities can use them in the project review and approval process; policy alternatives for Alternative Compliance; and continued project consultation and partnering.

Central Coast Water Board staff has assisted municipalities in developing proposals to obtain grant funding for LID implementation, and plans to continue doing so. The County of Santa Barbara was recently awarded $347,000 to implement the Draft Post-Construction Requirements. Work products developed under this grant should benefit other municipalities during Post-Construction Requirements implementation. The Central Coast LID Initiative is also available to provide assistance to municipalities in attaining grant funding.

Central Coast Water Board staff finds that the annual reporting requirements are reasonable and necessary. The information requested in the annual reporting requirements includes deliverables required by the Post-Construction Requirements and information about projects triggering the Post-Construction Requirements. Since the Permittees will be tracking project information for projects subject to the Post-Construction Requirements, it should not be burdensome to report the information.

The requirements are necessary to implement the federal Clean Water Act, and therefore cannot be withheld due to lack of funding.

Also, infill and redevelopment are provided multiple runoff control adjustments in the Draft Central Coast PCRs, reducing the likelihood that infill and redevelopment projects will be deterred by post-construction requirements. Central Coast Water Board staff acknowledges multiple environmental benefits of infill and redevelopment as compared to greenfield development. Central Coast Water Board staff recognizes the direct nexus to water quality and watershed health from doing such things as focusing development in the urban core, which typically requires less supporting infrastructure (e.g., roads), and redeveloping areas that are already disturbed, instead of creating new impacts and expanding the urban footprint. However, Central Coast Water Board staff does not agree that the Post-Construction Requirements will force infill projects to be abandoned in favor of greenfield projects. The Smart Growth Association, American Rivers, Center for Neighborhood Technology, River Network, and the National Resources Defense Council, asked ECONorthwest to investigate if stormwater regulations that require or encourage LID, applied uniformly to greenfield development and redevelopment, would impact developers' decisions about where and how to build. The study, based on case studies of multiple municipalities, indicated that implementing LID in redevelopment situations tended to be more challenging than on greenfield developments, because LID techniques are usually more site-specific and custom. However, developers were not choosing to invest in greenfield developments over redevelopment because of LID standards. The study indicated that developers' decision-making process for projects incorporates a wide range of economic factors, including various construction costs, current and future market conditions, regulatory incentives and disincentives, and uncertainty and risk. Many developers interviewed for the study described the cost of implementing stormwater controls as minor compared to other economic factors they considered in deciding whether or not to pursue a project, especially in the context of complex redevelopment projects and green building infill projects. The study points out that the demand for green buildings and sustainable stormwater practices has been increasing in response to the rapid growth in the global green building industry, which will likely play an important role in developers' decisions for how and where to build.[1]

Regardless of the strength of the correlation between infill and greenfield projects, Central Coast Water Board staff has included numerous provisions the Draft Post-Construction Requirements to ensure they do not present an undue burden for infill projects. These include:
1) Adjustments to retention requirements for any replaced impervious surfaces (manage only 50% of the runoff from replaced surfaces);
2) Further adjustments to retention requirements for projects in a Urban Sustainability Areas (match pre-project levels of retention of runoff from replaced surfaces);
3) A 10 percent limit on what portion of a site must be dedicated to retention-based Stormwater Control Measures;
4) Flow-through (non-LID/non-infiltration) options for water quality treatment for projects up to a 15,000-square foot size threshold;
5) An option to mitigate off-site;
6) An allowance for event-based analysis, reducing the cost burden for hydraulic analysis;
7) No requirement to demonstrate technical infeasibility for projects in Urban Sustainability Areas, reducing reporting costs; and
8) The stratification of sites into Watershed Management Zones that point to landscape appropriate performance requirements at the outset.

[1]ECONorthwest. *Managing Stormwater in Redevelopment and Greenfield Development Projects Using Green Infrastructure: Economic Factors that Influence Developers' Decisions,* June 2011.

■ **Goleta – 24**
3. The Proposed Post-Construction Requirements Far Exceed Hydromodification Requirements In The Phase II General Permit

The federal regulatory scheme establishes separate requirements for MS4 permits and applications based on whether the discharger is a large, medium, or small MS4.[135] The Phase I regulations govern the issuance of stormwater permits for large and medium MS4s, which by definition serve incorporated areas with populations of 100,000 or more.[136] The Phase II regulations govern the issuance of stormwater permits for small MS4s, which serve populations of less than 100,000.[137]

As mentioned, MS4s must implement BMPs, including six specific minimum control measures, and compliance with the BMPs equates to compliance with the MEP standard.[138] EPA has stated that small MS4s should not be required to implement BMPs that go beyond the six minimum control measures. For example, EPA guidance "strongly recommends" that:
[N]o additional requirements beyond the minimum control measures be imposed on regulated small MS4s without the agreement of the operator of the affected small MS4, except where an approved TMDL [total maximum daily load] or equivalent analysis provides adequate information to develop more specific measures to protect water quality.[139]

Although development and redevelopment standards are one of the six specific minimum control measures, the specific Post-Construction Requirements here exceed the level of BMPs associated with development and redevelopment standards for the Phase II communities.

[135] See 40 C.F.R. § 122.26.
[136] See 40 C.F.R. §§ 122.26(b)(4), (7); 55 Fed. Reg. 47990 (Nov. 16, 1990).
[137] 40 C.F.R. §§ 122.26(b)(16), 122.30-122.37.
[138] 40 C.F.R. § 122.34.
[139] 40 C.F.R. § 122.34(e)(2).

Specifically, and as discussed previously, with these Post-Construction Requirements, the Central Coast Water Board staff is purportedly proposing hydromodification requirements based on watershed processes. This means that they are looking to ensure that the project site post-development mimics the undeveloped state of the site regardless of existing development and land use changes that have occurred over many decades. This approach to application of Post-Construction Requirements far exceeds the hydromodification approach being required of all other Phase II communities that are otherwise subject to Section E.12 of the Phase II General Permit. In the Phase II General Permit, hydromodification management basically requires that post-project runoff cannot exceed estimated pre-project flow rate for certain specified flow rates.[140] In other words, previous development and land use changes are taken into consideration. Considering that the Central Coast Water Board is clearly moving down a path that departs from current practice and policy, such diversion as compared to what is being applied to other Phase II communities exceeds MEP.

Staff Response to Comment Goleta – 24

The State Board Phase II requirements are minimum requirements, and the Phase II permit specifically allows Regional Boards to develop more regionally applicable requirements. The Central Coast Draft PCRs are critical to protect water quality and beneficial uses in the Central Coast Region and are based on Central Coast landscape characteristics. The requirements focus on maintaining the watershed processes (such as overland flow, infiltration, baseflow, pollutant capture, and sediment transport) that are necessary for reducing pollutant discharges and protecting water quality and beneficial uses. The State Water Board funded $600,000 for development of Draft PCRs from the Cleanup and Abatement Account. A technical team of experts stratified the Central Coast region into watershed management zones and identified the dominant watershed processes for each of those zones. Central Coast Water Board staff built upon this technical foundation by developing Draft PCRs to protect the identified dominant watershed processes. Throughout the process of developing the Draft PCRs, Central Coast Water Board staff used a rigorous stakeholder involvement process that included charette-style workshops, a stakeholder review team, various traditional workshops, numerous stakeholder meetings, and several Central Coast Water Board agenda items. As a result of all these efforts, the Draft PCRs are well founded and effectively embody the post-construction stormwater management goals of the Phase II General Permit.

It is necessary for Central Coast municipalities to be required to implement the Draft PCRs, as opposed to relying upon the Phase II General Permit post construction requirements for all Phase II municipalities, because of the Central Coast Region landscape characteristics and the Central Coast Water Board and Central Coast municipalities have already conducted the region-specific work envisioned by the Phase II General Permit. To rely solely on the Phase II General Permit at this time, without requiring implementation of the Draft Central Coast Board's PCRs, would ignore the specific characteristics of this Region, and would discount a significant amount of technical analysis, stakeholder involvement, and training already invested. This would unnecessarily delay implementation and put at risk the products of the $600,000 in State Water Board funding from the Cleanup and Abatement Account.

Population growth and urban development anticipated for the Central Coast Region indicate on-going and future increases in impacts to watershed processes. Therefore, implementation of post-construction requirements that focus on watershed processes are critical to protection of water quality and beneficial uses in the Central Coast Region.

[140] Phase II General Permit at p. 56.

Furthermore, implementing the Central Coast Water Board's PCRs in the Central Coast Region can vastly benefit future statewide implementation of a watershed process-based approach to post-construction stormwater management. The Central Coast can essentially serve as a pilot program for California, allowing for identification of successes and areas of improvement that can be used to ensure an effective statewide program. Using the Central Coast as a pilot program makes sense, in that it allows a watershed process-based approach to post-construction stormwater management to be implemented in a targeted area prior to more wide-scale implementation.

The State Board heard extensive testimony on the Draft PCRs. At that time, the State Board had every opportunity to change the Draft PCRs or take action to halt their implementation. Instead, they expressly took unanimous action to allow the Central Coast Water Board to proceed with implementation of the Draft PCRs.

For justification about why the Draft PCRs do not exceed the MEP standard see Staff Response to Comments Goleta – 20, 21.

■ **Goleta – 25**

4. There Is an Overall Lack of Public Acceptance of the Post-Construction Requirements

Public comments and testimony related to the adoption of Resolution No. R3-2012-0025, and the Central Coast specific post construction requirements included in the November 16, 2012 draft of the Phase II General Permit provide overwhelming evidence of an overall lack of public acceptance for applying the Post-Construction Requirements to small MS4s. This is demonstrated by the fact that, in addition to a typical "responses to comments" document (which for Resolution No. R3-2012-0025 was 141 pages), Central Coast Water Board staff also prepared a summary of responses to major comments titled: "Key Issues in Public Comments on May 14, 2012 Draft Resolution No. R3-2012-0025 and Central Coast Water Board Staff Responses" (Key Issues).

Two of the requirements most frequently and consistently commented on as problematic were the requirements to: (1) prevent off-site discharge from events up to the 95th percentile 24-hour storm event, and (2) apply the Post-Construction Requirements to ministerial projects. Despite the critical public comments, the Central Coast Water Board has included the 95th percentile 24-hour storm event volume retention requirement in Draft Resolution No. R3-2013-0032.

Further evidence of public unwillingness to accept requirements proposed in Draft Resolution No. R3-2013-0032 is that, in response to extensive public comment, the State Water Board chose to remove "Attachment J" from its November 16, 2012 draft of the Phase II General Permit.[141] "Attachment J" contained the post-construction requirements developed as part of the Joint Effort – i.e., the Central Coast specific post-construction requirements. The State Water Board pulled Attachment J because of the "several unresolved issues acknowledged by the parties" to the Joint Effort, "including the Regional Water Board."[142] Now, the Central Coast Water Board is proposing Draft Resolution No. R3-2013-0032, which essentially contains the same requirements as did Attachment J.

In light of the highly critical public response to Resolution No. R3-2012-0025 and Attachment J, both of which were essentially the same as Draft Resolution No. R3-2013-0032, it is clear that

[141] Phase II Permit Fact Sheet at p. 36.
[142] Phase II Permit Fact Sheet at p. 36.

Resolution No. R3-2013-0032 would establish requirements that exceed the MEP standard, and should either be rejected, or modified accordingly.

Staff Response to Comment Goleta – 25
Central Coast Water Board staff's preparation of a Key Issues document assisted the public and Central Coast Water Board members in reviewing the record supporting Resolution R3-2012-0025 and ensured the Water Board made an informed decision. The preparation of the Key Issues document does not demonstrate "overwhelming evidence of an overall lack of public acceptance for applying the Post-Construction Requirements." Nor do the tone and content of the public comment letters evince the comment's claim that there is "an overall lack of public acceptance" of the Draft PCRs. Some public comments on the Draft Resolution support the Draft PCRs. Also, only a tiny fraction of the hundreds of thousands of public residents on the Central Coast provided comments.

Rather than rejecting the Draft PCRs, a majority of the public comments we received seek clarification on requirements; point out to the Central Coast Water Board potential challenges of implementing the Draft PCRs; suggest revisions to address these challenges; and/or request additional time before beginning implementation. Of 19 comment letters received by the Central Coast Water Board, 11 are from among the 40 dischargers who would be directly affected by the Water Board's action to approve the Draft PCRs. The remaining eight letters are from stakeholders representing various interests (e.g., consulting firms, the environment, realtors, farmers), and reflect a diversity of positions both for and in opposition to the proposed Draft PCRs.

The State Water Board heard extensive testimony on the Draft PCRs when they were included as Attachment J of the Draft Phase II General Permit. At that time, the State Water Board had every opportunity to change the Draft PCRs or take action to halt their implementation. Instead, they expressly took unanimous action to allow the Central Coast Water Board to proceed with implementation of the Draft PCRs.

■ Goleta – 26
VI. The Proposed Post-Construction Requirements May Subject Goleta To Future Takings Claims By Project Proponents That Are Unable To Develop Or Redevelop Within Goleta Due To The Challenged Provisions

Under the provisions of Draft Resolution No. R3-2013-0032, Goleta will be required to impose the Post-Construction Requirements on "Regulated Projects."[143] Regulated Projects that create and/or replace a specific amount of impervious surface will be required to meet the on-site runoff retention requirement to contain and infiltrate the 95th percentile 24-hour storm volume.[144] Imposition of this requirement on Regulated Projects may constitute a governmental regulation that deprives project proponents of the economic benefit of their private property. The state and federal Constitutions guarantee real property owners just compensation when their land is taken for public use.[145] Regulatory takings, though not direct appropriation or physical invasion of private property, are compensable under the Fifth Amendment.[146] Courts examining regulatory

[143] "Regulated Projects" include "all New Development or Redevelopment projects that create and/or replace ≥ 2,500 square feet of impervious surface (collectively over the entire project site) (Draft Resolution No. R3-2013-0032, Attachment 1 at p. 1.)
[144] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 6.
[145] *Allegretti & Co. v. County of Imperial* (2006) 138 Cal.App.4th 1261, 1269.
[146] *Lingle v. Chevron U.S.A. Inc.* (2005) 544 U.S. 528, 537.

takings challenges generally analyze three factors to determine whether a taking has occurred. The three factors are the economic impact of the regulation on the claimant, the extent to which the regulation has interfered with distinct investment-backed expectations, and the character of the governmental action.[147] The Post-Construction Requirements may be considered a regulatory taking if their application to Regulated Projects deprives project proponents of the economic benefit of their property.

The economic impact of the Post-Construction Requirements may be substantial in that it may deprive landowners of the ability to develop or redevelop the property in question. In addition, the Post-Construction Requirements essentially require project proponents to dedicate significant portions of the project site for infiltration of stormwater, which unreasonably impairs the value and use of the property. The need to retain the 95th percentile 24-hour storm event volume on-site through infiltration essentially requires that much of the project site be dedicated to open, pervious areas, which severely interferes with investment-backed expectations because it restricts the size and use of the property in question. Further, while the proposed regulation may not constitute a typical physical invasion or appropriation of land, the proposed regulation would effectively appropriate these open, pervious areas to a public use. Even if no such appropriation is found, the severity of the economic impact and the devastation of the investment-backed expectations of the landowners could give rise to a regulatory taking.

Although Draft Resolution No. R3-2013-0032 includes alternative compliance mechanisms, these provisions do not provide a feasible alternative for Goleta and could still subject Goleta to takings claims. For example, where it is technically infeasible to fully retain and infiltrate the 95th percentile 24-hour storm event volume of water the project must dedicate no less than ten percent of the impervious surface area to "retention-based Stormwater Control Measures."[148] Stormwater Control Measures include control measures such as conserving and protecting natural areas, and maintaining or creating riparian buffers.[149] These measures essentially require that a portion of the project site be dedicated to open pervious areas. Thus, in order to escape the entire runoff retention requirement, a project could still be required to forgo development of a portion of a project site, thereby limiting the economic viability of a project. The land dedication requirement may subject Goleta to takings claims.

Also, off-site mitigation is an option when a project cannot retain the full retention volume, and either fails to demonstrate technical infeasibility of full retention, or demonstrates technical infeasibility of full retention and fails to dedicate at least ten percent of the Project's impervious surface area.[150] However, because Goleta has so little open space, and the open space that exists is subject to development restrictions, a Project will be forced to try to find a way to dedicate ten percent of the impervious area of the project site. Most open space within Goleta's sphere of influence is protected by its designation as an ESHA, or agricultural land. Furthermore, Goleta recently passed an initiative restricting agricultural land development. Also, off-site compliance must be achieved within the same watershed as the Regulated Project, unless otherwise approved by the Central Coast Water Board's Executive Officer.[151] This approval provision will further constrain off-site mitigation opportunities. All of these limitations on off-site mitigation will indirectly impose the ten-percent on-site dedication requirement, which could give rise to a takings claim. In light of these concerns, the Central

[147] *Penn Central Transp. Co. v. City of New York* (1978) 438 U.S. 104.
[148] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 9, § B.4.e.
[149] Draft Resolution No. R3-2013-0032, Attachment 1 at pp. 26-27.
[150] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 9.
[151] Draft Resolution No. R3-2013-0032, Attachment 1 at p. 13.

Coast Water Board should revise Draft Resolution No. R3-2013-0032 to allow implementation of BMPs to the maximum extent feasible rather than requiring off-site compliance, regardless of whether off-site compliance is feasible.

Staff Response to Comment Goleta – 26
See Staff Response to Comment Lompoc – 5.

■ **Goleta – 27**
VII. Conclusion
Goleta respectfully requests that the Central Coast Water Board undertake a meaningful technical and public review process in developing post-construction requirements pursuant to the authority granted by the State Water Board in Section E.12.k. of the Phase II General Permit. Importantly, any post-construction requirements that the Central Coast Water Board might adopt must be consistent with the MEP standard. To the extent the Central Coast Water Board attempts to adopt requirements that exceed the MEP standard, it needs to undertake an economics analysis pursuant to Water Code section 13241. If the Central Coast Water Board is unable to adhere to these requirements, it should reject the proposed Post-Construction requirements and allow MS4s to implement post-construction stormwater management programs pursuant to the Phase II General Permit.

Staff Response to Comment Goleta – 27
See Staff Response to Comments Goleta – 20, 21.

■ **Lompoc – 1**
Though changes to the adopted Post-Construction requirements are proposed, several critical permittee concerns remain unaddressed:
The Draft Post-Construction Stormwater Management Requirements impose additional costs on permittees, constituting unfunded mandates, subject to reimbursement.

Staff Response to Comment Lompoc – 1
Article XIII B, Section 6(a) of the California Constitution provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." The Draft PCRs do not constitute state mandates that are subject to a subvention of funds.

First, the requirements of the Draft PCRs do not constitute a new program or a higher level of service as compared to the requirements of the existing Phase II General Permit. The overarching requirement to impose controls to reduce the pollutants in municipal storm water is dictated by the Clean Water Act and is not new (33 U.S.C. §1342(p)(3)(B).) The inclusion of new and advanced measures as storm water programs evolve and mature over time is anticipated under the Clean Water Act (55 Fed. Reg. 48052), and these new and advanced measures do not constitute a new program or higher level of service.

Second, and more broadly, mandates imposed by federal law, rather than by a state agency, are exempt from the requirement that the local agency's expenditures be reimbursed. (Cal. Const., art. XIII B, §9, subd. (b).) The Draft PCRs implement federally mandated requirements under the Clean Water Act and the Draft PCRs are therefore not subject to subvention of funds. This includes federal requirements to effectively prohibit non-storm water discharges, to reduce

the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. (30 U.S.C. §1342(p)(3)(B).) The authority exercised under the Draft PCRs is not reserved state authority under the Clean Water Act's savings clause (cf. Burbank v. State Water Resources Control Bd. (2005) 35 Cal.4th 613, 627-628), but instead is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the Draft PCRs. (See, City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region (2006) 135 Cal.App.4th 1377, 1389; Building Industry Ass'n of San Diego County v. State Water Resources Control Bd. (2004) 124 Cal.App.4th 866, 882-883.)

In recent months, the County of Los Angeles and County of Sacramento Superior Courts have granted writs setting aside decisions of the Commission on State Mandates that held that certain requirements in Phase I permits constituted unfunded mandates. In both cases, the courts found that the correct analysis in determining whether a municipal storm water permit constituted a state mandate was not to evaluate whether the individual permit conditions were expressly specified in federal statute or regulation but whether the permit as a whole exceeded the maximum extent practicable standard. (*State of Cal. v. Comm. On State Mandates* (Super. Ct. Sacramento County, 2012, No. 34-2010-80000604), *State of Cal. v. County of Los Angeles* (Super. Ct. Los Angeles County, 2011, No. BS130730.)

It should be noted that USEPA has issued an MS4 Permit Improvement Guide (April 2010, available at: http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf) that recommends many provisions for Phase II MS4 permits not explicitly specified in the six minimum measures established at Code of Federal Regulations, title 40, section 122.34. The MS4 Permit Improvement Guide provides the 95th percentile criterion as an example for communities to adopt. In that guidance document, one of the examples of site performance standards states, "Design, construct, and maintain stormwater management practices that manage rainfall onsite, and prevent the offsite discharge of the precipitation from all rainfall events less than or equal to [insert standards, such as 'the 95th percentile rainfall event']" (p. 52).

As laid out in the Technical Support Document and as supported by the record of this proposed Regional Water Board action, the requirements of the Draft PCRs, taken as a whole in concert with other provisions of the Phase II General Permit, are necessary to reduce the discharge of pollutants to the maximum extent practicable, to effectively prohibit non-storm water discharges, and to protect water quality. The findings as to implementing these federal requirements are the expert conclusions of the principal state agency charged with implementing the NPDES program in California. (Wat. Code, §§13001.) Therefore, the Draft PCRs do not constitute an unfunded mandate.

Finally, even if the Draft PCRs could be considered an unfunded mandate, under Government Code section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to charge a fee. The local agency permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with the Draft PCRs. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842.) The authority of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*Clovis Unified School Dist. v. Chiang* (2010) 188 Cal. App.4th 794, 812, quoting *Connell v. Superior court*

(1997) 59 Cal.App.4th 382, 401; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

■ **Lompoc – 2**
Proposition 218 has severely restricted funding for MS4 storm water program implementation.

Staff Response to Comment Lompoc – 2
Comment noted. It is beyond the authority of the Central Coast Water Board to address the constraints as imposed by Proposition 218.

■ **Lompoc – 3**
The Maximum Extent Practicable (MEP) Standard is exceeded by the requirement to infiltrate the 95th percentile storm event, when there is no exemption for sites where this is technically infeasible.

Staff Response to Comment Lompoc – 3
See Staff Response to Comments Goleta – 20, 21
The Draft PCRs provide for alternative compliance and do not require infiltration where it is technically infeasible.

■ **Lompoc – 4**
Requiring infiltration, to the exclusion of evaporation, transpiration, or storage/reuse, unreasonably restricts property owners' method of limiting run-off and does not mimic the natural hydrologic system. Not limiting required infiltration to the amount of water a site-specific analysis of pre-development hydrology determines would infiltrate into a site's soils when undeveloped, does not mirror natural hydrology.

Staff Response to Comment Lompoc – 4
The PCR methods for sizing retention facilities (Attachment D) optimize runoff infiltration while allowing for storage of the portion of runoff that does not infiltrate. The sizing methods are allowed for meeting the retention requirements, regardless of Watershed Management Zone. Therefore, through the compliance option provided in Attachment D, compliance is not limited only to infiltration in Watershed Management Zones 1, 5 and 8. Based on the assessment of watershed processes occurring within a Watershed Management Zone, the Performance Requirement identifies how retention should be achieved (i.e., infiltration vs. storage, rainwater harvesting, infiltration, and/or evapotranspiration), but technical constraints may prevent infiltration and the Draft PCRs allow non-infiltrative methods where this occurs.

The Draft PCRs are intended to protect and, to the extent reasonable, restore the watershed processes that occur on and around individual development sites. Requiring retention of the 95th percentile rain event is a proxy for actual predevelopment conditions (see Staff Response to Comment CASQA – 6). Individual project sites in a Watershed Management Zone requiring retention of runoff from the 95th percentile rain may be less permeable than surrounding areas due to normal variation in soil conditions. However, the Draft PCRs would require such sites to achieve 95th percentile retention (not necessarily through infiltration and not where technically infeasible) consistent with the predevelopment conditions of the entire Watershed Management Zone. This is a reasonable approach that is protective of water quality because:
a. In the pre-developed condition runoff from the site traveled via overland flow and interflow to: areas adjacent to the site where infiltration was possible; areas on and off-site with depressional storage capacity for later evapotranspiration and very slow infiltration; to heavily vegetated

areas capable of storage and evapotranspiration. Only after all these routes were exhausted, did remaining runoff reach a surface receiving water. Throughout Watershed Management Zones requiring retention, the Joint Effort methodology demonstrates that in predevelopment conditions runoff reaches receiving waters through overland flow as a rare occurrence during large storms, not smaller storms at or below the 85th or 95th percentile storm.
b. In the currently urbanized context of most projects, runoff can no longer go to these intermediate places and is instead routed directly to and through a conveyance system (MS4) engineered to efficiently deliver runoff to a receiving water.
c. Consequently, with the routing of predevelopment runoff no longer available, retention on- or off-site is an appropriate way to mitigate for the increased volume otherwise destined for the receiving water.

This is also a strong basis for the PCR provisions allowing off-site mitigation within the same watershed when an individual project site is less infiltrative than surrounding portions of the same Watershed Management Zone.

■ **Lompoc – 5**
Requiring off-site infiltration at unknown cost, unidentified distance and on untested soils lacks adequate nexus to receiving water quality and cannot ensure property owners rights to develop property are protected.

Staff Response to Comment Lompoc – 5
The Draft PCRs would not deny property owners rights to develop property. Off-site infiltration is an option for property owners where on-site mitigation is infeasible. This option allows property owners to develop their property even if they cannot meet the on-site requirements. The requirement for off-site infiltration is not a takings and does sufficiently protect a property owner's right to develop their property. The Supreme Court found that a land use regulation is not a taking if it substantially advances a legitimate state interest and does not deny an owner economically viable use of his land. *Dolan v. City of Tigard*, (1994) 512 U.S. 374. at 385.) To determine whether a land use regulation is a taking, the court must first determine whether the "essential nexus" exists between the "legitimate state interest" and the permit condition exacted by the city; and second, if such a nexus exists, the court must then decide the required degree of connection between the exactions and the projected impact of the proposed development. (*Id.* at 386.) Clearly, there is a legitimate state interest in improving water quality by preventing contaminated stormwater from entering water bodies, increasing water supplies in local underground aquifers, and diminishing the effects of impervious surfaces as a result of development. There is also a sufficient nexus between the legitimate state interest in water quality and the Draft Post-Construction Requirements, as the Draft Post-Construction Requirements were developed to minimize the effects of development on ground and surface waters. The purpose of the off-site infiltration is to mitigate the harm caused when a property owner develops their property and cannot meet the on-site requirements. The off-site projects must demonstrate that they will be as effective in maintaining watershed processes as implementation of the PCRs on site. Therefore, there is an adequate nexus to the receiving water quality. Therefore, the Draft Post-Construction Requirements meet the first part of the takings analysis under *Dolan*.

In *Dolan*, the Supreme Court found that there must be a "rough proportionality" between the degree of the exactions demanded by the city's permit conditions and the project impact of the proposed development to meet the second part of the analysis. (*Id.* at 387, 391.) The Supreme Court has stated that "rough proportionality" means that the required exaction is related both in

nature and extent to the impact of the proposed project. (*Id.* at 391.) In this case, the required post-construction controls are related both in nature and extent to the impact of the development projects. The impacts to water quality from these development projects include pollutant discharges and excessive instream erosion, which the Draft Post-Construction Requirements are specifically designed to address. The exactions give developers the flexibility of alternative compliance measures if on-site mitigation is infeasible, therefore not depriving the developers of economic beneficial use of their property. The Draft Post-Construction Requirements are tailored to the size and impact of the project, and satisfy the Supreme Court's test of "rough proportionality." The Draft Post-Construction Requirements meet both parts of the takings analysis, and so are not a taking under the Fifth Amendment.

■ **Lompoc – 6**

Requiring identification and construction of off-site facilities, involving unknown costs, process and timing, is overly burdensome and will likely render desirable urban infill and redevelopment proposals infeasible.

Staff Response to Comment Lompoc – 6

Central Coast Water Board staff has included numerous provisions the Draft Post-Construction Requirements to ensure they do not present an undue burden for infill and redevelopment projects. These include:

1) Adjustments to retention requirements for any replaced impervious surfaces (manage only 50% of the runoff from replaced surfaces);
2) Further adjustments to retention requirements for projects in a USA (match pre-project levels of retention of runoff from replaced surfaces)
3) The 10 percent limit on what portion of a site must be dedicated to infiltration Stormwater Control Measures
4) Flow-through (non-LID/non-infiltration) options for water quality treatment for projects up to a 15,000 square foot size threshold.
5) Opportunities to achieve compliance offsite.

Exempting projects from stormwater requirements would be entirely inconsistent with the Central Coast Water Board's responsibility to implement the Clean Water Act and specifically NPDES stormwater regulations. Off-site alternatives are necessary to ensure these regulations are met and are a consistent feature of post-construction requirements in municipal stormwater permits throughout the State.

■ **Lompoc – 7**

Adoption of the proposed requirements will transfer development pressure away from the Central Coast, away from urban areas and into rural areas where the requirements do not apply. This will directly result in fewer economic opportunities for Central Coast residents, stagnation and decay in our communities, and further loss of agricultural lands and open space we treasure.

Staff Response to Comment Lompoc - 7

Central Coast Water Board staff does not agree that the Draft Post-Construction Requirements will force development from urban areas and into rural areas. The Smart Growth Association, American Rivers, Center for Neighborhood Technology, River Network, and the National Resources Defense Council, asked ECONorthwest to investigate if stormwater regulations that require or encourage LID, applied uniformly to greenfield development and redevelopment, would impact developers' decisions about where and how to build. The study, based on case

studies of multiple municipalities, indicated that implementing LID in redevelopment situations tended to be more challenging than on greenfield developments, because LID techniques are usually more site-specific and custom. However, developers were not choosing to invest in greenfield developments over redevelopment because of LID standards. The study indicated that developers' decision-making process for projects incorporates a wide range of economic factors, including various construction costs, current and future market conditions, regulatory incentives and disincentives, and uncertainty and risk. Many developers interviewed for the study described the cost of implementing stormwater controls as minor compared to other economic factors they considered in deciding whether or not to pursue a project, especially in the context of complex redevelopment projects and green building infill projects. The study points out that the demand for green buildings and sustainable stormwater practices has been increasing in response to the rapid growth in the global green building industry, which will likely play an important role in developers' decisions for how and where to build.[152]

See Staff Response to Comment CASQA – 2 for discussion of economic feasibility of implementing Draft PCRs.

■ City of Monterey – 1

The purpose of this letter is to express continued concerns related to the application of the PCRs to "ministerial" development applications. The current "ministerial" language found on page 3 of the "Regulated Projects" section of the PCRs reads:

"(2) Ministerial Projects - If the project is only subject to ministerial approval, the Permittee shall apply the Post-Construction Requirements to those projects that have not received any ministerial approvals. If the ministerial project receives multiple ministerial approvals, the Permittee shall apply the Post-Construction Requirements to the first ministerial approval. Ministerial approvals include, but are not limited to, building permits, site engineering improvements, and grading permits."

This same exact "ministerial" verbiage was placed within, and then later completed struck from, the entirety of the Phase" Permit Order (adopted by the State Water Resources Control Board on February 2013). In fact, the Phase" Permit Order contains no references to "ministerial" projects, though it does refer to "discretionary permit projects" on page 51 as follows:

"Effective Date for Applicability of Low Impact Development Runoff Standards to Regulated Projects: By the second year of the effective date of the permit, the Permittee shall require these Post-Construction Standards be applied on applicable new and redevelopment Regulated Projects, both private development requiring municipal permits and public projects, **to the extent allowable by applicable law. These include discretionary permit projects that have not been deemed complete for processing and discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals. Discretionary projects that have been deemed complete prior to the second year of the effective date of this Order are not subject to the Post Construction Standards herein. For the Permittee's Regulated Projects, the effective date shall be the date their governing body or designee approves initiation of the project design."** *[Bold emphasis added.]*

[152] ECONorthwest. *Managing Stormwater in Redevelopment and Greenfield Development Projects Using Green Infrastructure: Economic Factors that Influence Developers' Decisions,* June 2011.

The California Environmental Quality Act (CEQA) delineates ministerial projects as being subject to fixed standards/objective measurements with little or no judgement to be exercised by local agency or staff. "Ministerial" actions are also not subject to CEQA. As currently written, the PCRs may allow ministerial permit applications be subject to varying levels of PCR implementation. This exercise of discretionary judgment by local agency staff on a ministerial application may propel these projects into the realm of needing CEQA review and determination.

Legal Implications of Requiring Discretionary or Subjective Standards to Water Quality Control Measures for Ministerial Projects

As we have previously expressed, because of the subjectivity in some of the standards proposed in the Central Coast Regional Water Quality Control Board (Regional Board) PCR rulemaking, this action has troubling implications for local agencies' ability to continue issuing ministerial development approvals without having to first subject those projects to environmental review.

Section 21080 of the Public Resources Code establishes that CEQA "shall apply to discretionary projects 1 proposed to be carried out or approved by public agencies," and shall not apply to ministerial projects. [Public Resources Code, § 21080, subdivisions. (a) & (b)(1); CEQA Guidelines, § 15268, subd. (a).) Ministerial projects "involve[) only the use of fixed standards or objective measurements, and the public official cannot use personal, subjective judgment in deciding whether or how the project should be carried out." (CEQA Guidelines, § 15369; see also *Friends of Juana Briones House v. City of Palo Alto* (2010) 190 Cal.AppAth 286 *(Friends of Juana Briones House)* [finding that the approval of a demolition permit was ministerial under the *governing* municipal code provision, which did not *give* the city authority to impose permit conditions).) Each public agency can make a determination of what is ministerial "based upon its analysis of its own laws" and "either as part of implementing regulations or on a case-by-case basis." (CEQA Guidelines, § 15268, subd. (a); *Friends of Davis v. City of Davis* (2000) 83 Cal.AppAth 1004, 1015 ["Under well-established law, an agency's view of the meaning and scope of its own ordinance is entitled to great weight unless it is clearly erroneous or unauthorized").)

The key question in determining whether a proposed agency approval would be a ministerial action within the meaning of CEQA is whether *whatever* arguable discretion a governing statute, regulation, or ordinance gives the agency includes the power or authority to "shape the project in a way that would respond to concerns raised in an" environmental document. *(Mountain Lion Foundation v. Fish* & *Game Com.* (1997) 16 Cal.4th 105, 117 *(Mountain Lion Foundation);* see also *Friends* of *Westwood, Inc. v. City* of *Los Angeles* (1987) 191 Calo.App.3d 259,272 [agency action is not discretionary for CEQA purposes unless the agency could "lawfully deny the permit or condition it in any way which would mitigate the *environmental* damage in any significant way"] [italics added].) In other words, the obligation to comply with CEQA is not triggered by the existence of *any* discretion in the governing body of law an *agency* must apply; rather, CEQA does not apply unless such discretion gives the agency the authority to address *environmental* concerns either by denying a proposed project or by imposing conditions that *can* somehow *reduce* the severity of environmental impacts.

A relatively recent CEQA precedent illustrating these points is *Health First v. March Joint Powers Authority* (2009) 174 Cal.App.4th 1135, 1144 *(Health First),* in which the court found that the respondent public agency's approval of a design plan application was not subject to CEQA review because the agency had "acted ministerially." In 2006, a British grocer had

submitted a design plan application to the March Joint Powers Authority for the development of a large warehouse distribution facility on the former March Air *Force* Base. *(Id.* at p. 1137.) Prior CEQA review had already been completed twice for general land uses in the area, first in 1999 for the general plan to redevelop the March property, and again in 2003 for the March Business Center's specific plan, which the court found to encompass the proposed distribution facility. *(Id.* at pp. 1138-1139.) With respect to the design plan application, the court concluded that no further environmental review was necessary because the Authority "accomplished its review [of the distribution facility] by completing a checklist of about 125 yes-or-no questions," and "exercised no *discretion." (Id.* at p. 1144.) Furthermore, the court found that the Authority had not and could not require mitigation measures "in a discretionary fashion," and was instead restricted to conditioning approval upon the implementation of mitigation measures included in the 2003 specific plan. *(Id.* at pp. 1145-1146.) Therefore, approval of the design plan application was ministerial and not subject to CEQA. In short, although the agency had imposed a series of conditions on the project, the agency did so based on criteria developed previously, and thus had no need to exercise any discretion with respect to the design plan application.

In contrast, in the Regional Board's proposed rules that it urges local agencies to incorporate into their own zoning ordinances, several of the water quality control measures are vaguely framed or suggest the exercise of discretion is required on the part of the agency official making determinations of whether proposed projects will comply with the standards. If these standards are required to be applied even to ministerial approvals, as the currently proposed rulemaking indicates, compliance with these rules would therefore require local building officials to exercise discretion on a case-by-case basis to determine whether the proposed project meets the standards or not or to suggest additional ways the project could be modified or conditioned in order to meet the standards. Those standards would therefore remove the objectivity and fixed standards that are the distinctive characteristic that defines "ministerial" approvals and transform them into discretionary actions that then potentially trigger the need to undertake environmental review under CEQA.

CEQA review is an important and necessary step in the consideration and approval of discretionary projects, but it does have the potential to add significant costs and delay to the administrative process. The City fears that if the Regional Board's standards are not either revised to provide more objective or quantifiable standards applicable to ministerial approvals or to exclude ministerial approvals entirely, it could be significantly more exposed to the threat of delaying and costly litigation under CEQA for its handling of ministerial approvals, either from the developers who expect a high level of certainty in the standards for ministerial approvals or from project opponents who could assert the need to treat ministerial projects as discretionary and therefore subject to CEQA. Thus, the regulations, as proposed, place the City and other local agencies in a difficult position, legally and practically speaking.

Recommendation

The City therefore urges the Board to remove ministerial applications/projects from inclusion in the PCRs "Regulated Projects" category at this time. If the Board desires to capture ministerial applications in the future, we recommend and support the following steps:

- Engage with California Building Standards Commission (CBSC): We recommend the Regional Board/staff engage the CBSC about possible inclusion of post-construction storm water design standards into the CalGreen/Building Code and/or International Building Code. The building standards developed through the Commission receive public review and are adopted for statewide use for ministerial applications like building permit applications. Incorporating reasonable standards into the Building Code would

allow for equal application of and objective standards for ministerial projects statewide, and remove risk to local agencies with the currently envisioned PCR "regulated project" path for ministerial projects.

- Establish Stakeholders to Assist in Developing Draft Statewide Post Construction Storm Water Building Standards for Ministerial projects: The Regional Board could establish a stakeholder group that may include Building Officials, contractors, planners, engineers, and developers familiar with and involved in daily use of California Building Code, development and landuse applications, CEQA, etc. A Regional Board-led stakeholder group could assist in developing draft verbiage for submittal to and consideration by the CBSC for a future Cal Green revision.

The City understands that the above recommendations differ from the current path envisioned by the Regional Board. They are steps, though, that we feel could adequately and legally substantiate the desired application of the PCRs to ministerial projects.

Staff Response to Comment City of Monterey - 1

Central Coast Water Board staff acknowledges that the City cannot insert discretionary requirements into ministerial permits. However, nothing in the Draft PCRs necessitates the City to do so. The solution to this issue, which Central Coast Water Board staff has shared with the City on multiple occasions, is straightforward. The City can simply interpret the Draft PCRs so that they are applied to ministerial projects in a manner that does not require discretion. An example would be for the City to take PCR section B.2.a.ii, which requires projects to "minimize compaction of native soils," and apply it as a non-discretionary requirement such as: "Landscaped area soils shall not be compacted above 85 percent of maximum density."

Central Coast Water Board staff has offered to sit down with City staff to work through each of the five requirements in section B.2.a that could apply to ministerial projects, in order to interpret the requirements in a manner that would allow them to be applied in ministerial permits. Central Coast Water Board staff then planned to share the results of such an effort with the other municipalities as *examples* of appropriate approaches for addressing this issue that each municipality could then tailor to their jurisdictional conditions. The City declined staff's offer in favor of the statewide approach recommended in their comment.

Central Coast Water Board staff finds that the City's recommendation to be an inferior solution. Currently, municipalities have substantial flexibility in implementing the requirements – something municipalities typically favor. The City's statewide approach would take away that flexibility and replace it with a one-size-fits-all approach. Based on past experience, Central Coast Water Board staff finds it likely that many other municipalities would be opposed to such a reduction in their flexibility to implement the requirements. Moreover, the effort involved to develop statewide requirements is not in sync with the scale of the issue. Developing statewide requirements would be a massive undertaking requiring substantial state and local resources, yet the projects to which such statewide requirements would apply are relatively small. Since ministerial projects are typically small, the development of requirements for such projects should be scaled accordingly, for the sake of efficiency. The approach offered by Central Coast Water Board staff meets that objective, while the City's recommendation does not.

It is important to note that the City's interpretation of the new Phase II Permit and how it relates to ministerial projects is incorrect. The post-construction requirements of the new Phase II Permit apply to applicable ministerial projects. The new Phase II Permit does not distinguish

between ministerial and discretionary projects, stating at section E.12.c.ii: "The Permittee shall regulate all projects that create and/or replace 5,000 square feet or more of impervious surface" (emphasis added). State Board staff confirmed to Central Coast Water Board staff that the new Phase II Permit requirements apply to ministerial projects.[153] The Draft PCRs' and new Phase II Permit's application of post-construction requirements to ministerial projects is consistent with the approach generally taken statewide for years. For example, stormwater permits in the Bay Area, Los Angeles, and San Diego all apply post-construction requirements to projects meeting specific criteria, regardless of the projects' discretionary or ministerial status.

Finally, the City's proposal to exempt ministerial projects from the Draft PCRs can create regulatory loopholes, potentially leading to inadequate water quality and beneficial use protection. Municipalities throughout the Central Coast region have differing protocols or standards for determining whether or not a project becomes a discretionary project. Some of these protocols or standards could allow significant projects to be ministerial. Municipalities could also change how ministerial projects are determined in order to alleviate a greater number of projects from being subject to the Draft PCRs. As such, exemption of ministerial projects from the Draft PCRs is problematic and potentially a threat to water quality.

■ City of Paso Robles– 1

The City of Paso Robles supports its sister agencies in their request for consistency in the timing of implementation of Post-Construction Requirements. The draft language of the PCRs states "within 365 days of Central Coast Water Board approval.." We support continued inclusion of this language resulting in implementation in July, 2014. The City of Paso Robles is prepared and on course to implement the PCRs by September 6, 2013, however it appears other agencies may not be. More importantly, the September date is not consistent with requirements for other neighboring agencies just beyond the boundaries of Region 3.

There is still so much to be learned. We are currently practicing LID to the extent we can through an interim basis. We find particular bio-retention soils are still not available to us on the Central Coast, yet we're only months away from implementing regulations requiring its installation. Local engineers still have much to learn regarding design practices.

We believe it is in the best interests of success of the program that timing of implementation is unified beyond Region 3.

Staff Response to Comment City of Paso Robles - 1

See Staff Response to Comment Atascadero – 3

■ City of Santa Barbara – 1

The purpose of this letter is to express the City's concerns with the implementation schedule included in the PCRs, given the amount of time necessary for City ordinance development, review, and approval upon adoption of the final binding Resolution and revised PCRs.

The Water Board's past direction and expectation for municipalities to expend time and resources to revise and approve enforceable mechanisms for the PCRs before they have been adequately reconsidered and re-adopted by the Board has been a concern. The Draft

[153] Personal communication with Eric Bernsten, State Water Board staff, March 12, 2013.

Resolution requires that municipalities begin implementation of the PCRs to all regulated projects by September 6, 2013. This proposed schedule provides less than two months from the scheduled Public Hearing date of July 12, 2013 for municipalities to revise codes and/or adopt other enforceable mechanisms to implement the PCRs. This is an unrealistic timeline.

Therefore, it is the City of Santa Barbara's recommendation that the Board allow at least six months from the date of Regional Board adoption of the final Resolution and PCRs to begin enforcement of the PCRs. This will allow sufficient time to codify the storm water management requirements in the City Municipal Code.

Staff Response to Comment City of Santa Barbara - 1
Central Coast Water Board staff proposes a six-month extension of the September 6, 2013 implementation deadline for the Draft PCRs to provide Permittees additional time to prepare. The new proposed deadline for implementation is March 6, 2014. Central Coast Water Board staff has revised the Draft Resolution and Draft PCRs to reflect this extension.

■ **City of Santa Maria – 1**
Urban Sustainability Areas (USAs)
PCR Section C.3. allows the establishment of "Urban Sustainability Areas" (USAs) by municipalities. The City commends the Regional Board for including this option in the Post-Construction Requirements. USAs will smooth the road for infill development and "smart growth." The City and other cities in Region 3 have "urban centers" that will be well-served by this. The criteria for Regional Board approval of USAs is unclear in the Post-Construction Requirements and needs to be further refined through coordination with the Joint Effort Review Team to provide clear guidance to municipalities that are interested in designating a USA.

Staff Response to Comment City of Santa Maria - 1
Central Coast Water Board staff recognizes the need for further refinement of the specific parameters and thresholds that define high density, transit-oriented, and pedestrian-oriented, applicable to the Central Coast Region. For this reason, USAs are the focus of ongoing stakeholder involvement. The requirement for Water Board Executive Officer approval of proposals to delineate USA is appropriate given the final specifications for these proposals is expected after the adoption of Draft Resolution R3-2013-0032.

Central Coast Water Board Staff proposes changes to Draft PCRs Section C.3.a. to clarify the intent (see Staff Response to Comment Goleta – 16).

■ **City of Santa Maria – 2**
Performance Requirement No. 2: Water Quality Treatment
It is well established that water quality control measures are most economical and efficient when they target small, frequent storm events that over time produce more total runoff than the larger, infrequent storms targeted for design of flood control facilities. Capturing this additional incremental volume beyond the 85th percentile has not been demonstrated to be more protective of water quality. This performance requirement should be revised accordingly.

Staff Response to Comment City of Santa Maria - 2
See Staff Response to Comment CASQA – 3

■ **City of Santa Maria – 3**

Pre-development watershed processes protect the ecosystem
Performance Requirement No. 3 requires volume retention of the 95th percentile event. This standard's intent is to "protect watershed processes so that beneficial uses of receiving waters are maintained and, where applicable, restored." An event-based volume retention standard is not a well-developed or proven approach for hydromodification control. It is very important for the downstream ecosystem to receive runoff post construction similar to the predevelopment runoff. The City recommends Regional Board staff continue working with the JERT and Central Coast municipalities to develop sizing and design criteria in Performance Requirement No. 3, consistent with appropriate hydrologic analysis methods that optimize onsite retention to reflect actual rainfall/runoff relationships for the project site.

Staff Response to Comment City of Santa Maria – 3
See Staff Response to Comments: CASQA 1, 4, and 5.

■ **City of Santa Maria – 4**
Performance Requirement No. 5 allows projects to be subject to "Special Circumstances" based on certain site and/or receiving water conditions that were not captured at the regional scale of analysis. Post-Construction Requirements Section B.6. states: "The Special Circumstances designation exempts a Regulated Project from Runoff Retention and/or Peak management Performance Requirements where those Performance Requirements would be ineffective to maintain or restore beneficial uses of receiving waters." The City maintains because the entire Santa Maria Valley watershed overlies the same groundwater basin, whether the water percolates on site or within the Santa Maria River, the ideal site for percolation for this particular watershed, that Runoff Retention should not be applicable in these Special Circumstances for Watershed Management Zones 1 and 4 (if overlying a designated Groundwater Basin) any more than the other Zones specified in B.6.b)ii).

Presumably, if a Project's receiving water is not susceptible to hydromodification impacts, maintaining watershed processes via hydromodification controls per Performance Requirement No. 3 would be ineffective for maintaining beneficial uses of those receiving waters. Furthermore, implementation of hydromodification controls per Performance Requirement No. 3 will not restore beneficial uses in existing hardened channels. The watershed processes (i.e. watershed hydrology) are just one consideration in channel restoration projects. Projects subject to these Special Circumstances should only be required to implement Performance Requirement No. 2: Water Quality Treatment. The City recommends removal of Performance Requirement No. 3: Runoff Retention for Highly Altered Channel and/or Intermediate Flow Control Facility Special Circumstances as shown below:

6) b) Performance Requirements for Highly Altered Channel and/or Intermediate Flow Control Facility Special Circumstances:
i) For Regulated Projects that: 1) create and/or replace >22,500 square feet of impervious surface; 2) are located in WMZs 1, 2, 5, and 8, and those portions of WMZs 4, 7, and 10 that overlie a designated Groundwater Basin:
(1) Water Quality Treatment (Performance Requirement No. 2)
~~(2) Runoff Retention (Performance Requirement No. 3)~~

Staff Response to Comment City of Santa Maria – 4
See Staff Response to Comment CASQA – 8.

■ County of Santa Barbara – 1

Time Extension

The PCRs are complex and unprecedented in scope. Even Water Board staff recognize they are not perfect and will take some time to fully implement. The complexity and the design uncertainty of Attachment D have been the subject of many hours of review by members of the Joint Effort Review Team, who focused only on interpreting the existing language. For example, the Joint Effort Review Team recommended the proposed draft modifications to SCM sizing criteria in March. The County of Santa Barbara was a participant on that team. It was a substantial endeavor to develop recommended revisions, which are reflected in part in the April draft PCRs.

The County prepared for the upcoming permit requirements by applying for a Proposition 84 grant from State Water Resources Control Board, "Implementing the Joint Effort". Although the grant was awarded in July 2012, it wasn't until April 2013 that the Water Board executed the grant agreement. We had hoped to start work with the consultant in the fall, with the critical task to develop the Technical Guide for assisting both Permittees and developers implementing the PCRs. Regardless, it would be inappropriate for the County to move too far ahead using State funds before the PCRs are final. Up until now, they have been somewhat of a moving target. At this point, the County has an extremely limited timeframe for executing clear and effective technical guidance.

Although the County is prepared to implement the PCRs in good faith starting September 6, 2013, an extension would allow us to

- Develop better technical guidance,
- Refine design information needed, and therefore improve the quality of submittals we receive from applicants for development approvals,
- Conduct outreach and training for land development professionals and municipal reviewers,
- Complete any necessary code revisions for Board of Supervisor's approval.

Recommendation: Extend implementation date by six (6) months from the date of Regional Board adoption of the final Resolution and PCRs.

Staff Response to Comment Santa Barbara County – 1

Central Coast Water Board staff proposes a six-month extension of the September 6, 2013 implementation deadline for the Draft PCRs to provide Permittees additional time to prepare. The new proposed deadline for implementation is March 6, 2014. Central Coast Water Board staff has revised the Draft Resolution and PCRs to reflect this extension.

■ County of Santa Barbara – 2

Goals of Joint Effort and 95th Percentile Storm

When the Water Board initiated the Joint Effort, the goal was to protect watershed processes in urban areas from further impacts due to new development, and to some degree, restore lost watershed processes from existing development. The first outcome was analysis of landforms and runoff patterns based on field observation, mapped geology, and slope. Watershed Management Zones were then developed, defined by their watershed process character in relation to geology and slope. Water Board staff then took the narrative descriptions of Watershed Management Zones and interpreted that *no runoff would occur* from a single frequency storm event, the 85th or 95th percentile.

Obviously, that cannot happen in all cases. There are entirely different soil types and rainfall patterns throughout the Watershed Management Zones and too much variability to assume 1)

all zones have the same rainfall/runoff pattern, and 2) runoff only occurs from the 85th or 95th percentile event. This approach is not supported by any technical analysis or model that actually demonstrates a rainfall/runoff pattern. Verification should have been provided in the original technical analysis with the assembled consultant team.

Because of the oversimplified approach, Water Board staff had to make various adjustments for site conditions. As a result, the PCRs' one-size fits all threshold needs significant adjusting to accommodate the ill-fitting situations. As an example, all of the urban areas of Santa Barbara County are in a Watershed Management Zone that requires infiltration of runoff of the 95th percentile storm event (with few small exceptions on the south coast). Therefore, a project in Orcutt - a somewhat flat area with predominantly infiltrative soils, which mostly drains into Orcutt Creek and infrequently flows into its downstream confluence with Santa Maria - must infiltrate a 1.5" rainfall depth. In contrast, a project in Goleta, Montecito, or Carpinteria, with type D soils and steep slopes, which may discharge very near the ocean, has to infiltrate up to a 2.5" runoff event. The consequence is this: a development in Orcutt might easily be able to accommodate the infiltration requirement, maybe even undersize retention compared to pre-development conditions, whereas a similar development on the south coast would be highly challenged to infiltrate that volume, and either over-size retention compared to pre-development natural conditions, or apply the reduction credit of 10% effective impervious surface area for retention-based BMPs.

Because the 85th/95th volume criteria is a static blunt instrument, the PCRs are peppered with reductions, offramps, and exceptions to compensate for awkward outcomes due to site variability.

According to Water Board staff, the criterion to retain the 95th percentile runoff event is taken from USEPA's 2009 "Technical Guidance on Implementing Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (EISA)." Implementation of the criterion for applicable Federal facilities is required to the "maximum extent technically feasible," and there is no penalty or requirement for off-site mitigation if the criterion cannot be achieved. The USEPA document also provides the option of using site-specific hydrologic analysis to establish predevelopment hydrology performance design objectives—an option that the Region 3 Permittees have requested but staff has not included in the PCRs. Finally, it should be noted that the USEPA guidance includes eight hypothetical case studies showing the requirement to retain the 95th percentile storm volume. None of the case studies are in California or in other any other region that has a semi-arid climate. Seven of the eight case studies were applied to sites assumed to have relatively infiltrative soils. On one case study with Hydrologic Soil Group "D" (clay) soils, it was found technically infeasible to achieve the criterion. There, the Maximum Extent Technically Feasible was achieved with only three-quarters of the 95th percentile event managed onsite.
If it is shown that the 95th percentile is the event threshold where no runoff would occur in an undeveloped condition, then it is the correct approach. Until then, the County proposes the following revision.

Recommendation: Revise sizing criteria to allow for matching pre-development hydrology.

vi) Hydrologic Analysis and Structural Stormwater Control Measure Sizing – To determine Stormwater Control Measure sizing and design, Permittees shall require Regulated Project applicants to use one of the following: 1) the hydrologic analysis and sizing methods as outlined in Attachment D, or 2) a locally/regionally calibrated continuous simulation model that **results in an equally protective method for matching pre-development hydrology, proposed by the Permittee and** ~~equivalent optimization of on-site runoff volume retention; or~~

~~3) hydrologic analysis and sizing methods, equally effective in optimizing on-site retention of the runoff generated by the rainfall event specified in Section B.4.c, that have been~~ approved by the Central Coast Water Board Executive Officer.

Staff Response to Comment Santa Barbara County – 2
See Staff Response to Comments: CASQA – 1, 4, 6, and Goleta – 9.

■ **County of Santa Barbara – 3**
Pre-Existing Programs
It is unclear why pre-existing post-construction programs that were deemed equivalent to the PCRs (e.g. Cities of Lompoc, Santa Barbara) cannot be used by other Permittees. If it was an acceptable program 30 days after September 6, 2012, why wouldn't it be an acceptable program for Permittees now?
We recommend that a Permittee be given the option, at any time, to implement an equivalent post-construction program as long as the Water Board approves it.

Recommendation: Allow Permittees to adopt an approved post-construction program.

G. ~~Pre-existing~~ **Other Equivalent** Programs

a) A Permittee may propose, for Central Coast Water Board Executive Officer approval, implementation of **equivalent** ~~pre-existing~~ post-construction stormwater management requirements for development projects in the Permittee's jurisdictional coverage area, in place of implementing the requirements set forth in the Post-Construction Requirements. To be eligible for consideration and approval, the proposal must demonstrate the following:

i) The Permittee's ~~pre-existing~~ **equivalent** post-construction stormwater management requirements are as effective as the Post-Construction Requirements in maintaining watershed processes, impacted by stormwater management, that are necessary to protect water quality and beneficial uses;

~~ii) The Permittee was implementing its pre-existing post-construction stormwater management requirements prior to Central Coast Water Board approval of the Post Construction Requirements; and~~

iii) The Permittee's **equivalent**~~ pre-existing~~ post-construction stormwater management requirements include LID site design and runoff reduction measures, numeric runoff treatment controls, numeric runoff retention controls, numeric runoff peak management controls, and project applicability thresholds as effective as those included in the Post-Construction Requirements.

b) A Permittee must submit its proposal ~~within 30 days of adoption of the Post-Construction Requirements by~~ **to** the Central Coast Water Board. The Central Coast Water Board Executive Officer will approve or deny the proposal within 90 days of receipt of a proposal.

c) If the Central Coast Water Board Executive Officer denies a Permittee's proposal, the Permittee shall **continue to** adhere to the Post-Construction Requirements provisions and deadlines.

Staff Response to Comment Santa Barbara County – 3
Central Coast Water Board staff offer three specific reasons for only approving *pre*-existing programs and only allowing application of those pre-existing programs to the jurisdictions that developed the programs: 1) the effectiveness of the pre-existing programs in maintaining watershed processes is assured by a combination of physical and institutional attributes unique to the jurisdiction; 2) the ability of the Permittee to successfully implement the pre-existing

program cannot be known where no pre-existing program exists; and 3) fairness. These reasons are discussed in detail below. Central Coast Water Board staff concludes Permittees that have no *pre*-existing program cannot satisfy these three factors and therefore allowing a Permittee to implement another Permittee's pre-existing program is not appropriate.

Effectiveness of the pre-existing programs in maintaining watershed processes:
Evaluation of effectiveness of pre-existing programs is based on what the requirements are and how they are applied, which to a large degree is dependent on the unique physical and institutional conditions within the Permittees' jurisdictions. These jurisdiction-specific conditions do not exist region-wide, so the jurisdiction-specific programs do not lend themselves to application region-wide. Examples of jurisdiction-specific physical and institutional attributes in pre-existing programs approved by Central Coast Water Board staff include:
(1) Pre-existing program requirements are implemented beyond the Phase II General Permit boundaries, resulting in greater protection to larger portions of a watershed.
(2) A limited amount of anticipated new development, or, build-out potential, supports pre-existing program's combination of applicability thresholds and requirements.
(3) Applying pre-existing program applicability thresholds at a lower threshold, results in many more projects being subject to post-construction requirements as compared to the Draft PCRs. While administratively achievable for the city with the pre-existing program, it may be inefficient in jurisdictions with much larger numbers of smaller scale development projects.
(4) Permittee commitment to large creek restoration and stormwater quality improvement projects supported by dedicated funding. The projects likely achieve protection and improvement of water quality and watershed processes, due to the fact the projects go beyond mitigation for specific development impacts.
(5) Permittee's combination of soil conditions and existing stormwater infrastructure support more streamlined requirements in pre-existing program.

Because Central Coast Water Board staff approved pre-existing programs for specific municipalities with these physical and institutional attributes, staff considers it unlikely that, if implemented in other jurisdictions, the pre-existing programs would result in watershed process protection equivalent to that achieved through implementation of the Draft PCRs.

Ability of Permittee to successfully implement pre-existing program:
All pre-existing programs approved by Central Coast Water Board staff demonstrate Permittee leadership and commitment to move forward with implementation of post-construction stormwater management requirements. For example, the City of Santa Barbara has implemented its post-construction requirements since July of 2008. The City was proactive in investing City funds to develop post-construction requirements, then expended considerable time and effort engaging stakeholders and doing outreach to ensure the resulting requirements reflected local interests. The City then completed internal training and coordination among its departments and staff to prepare and train City staff for successful implementation of the post-construction requirements. These combined efforts provide Central Coast Water Board staff assurance that implementation will continue to meet with success. Both the City of Santa Barbara's commitment of funds and its effort to engage stakeholders and train staff were critical factors in Central Coast Water Board staff's approval of the City's program.

Permittees also demonstrated their ability to implement pre-existing programs by presenting evidence of a history of successful implementation of requirements through project approvals. This cannot be demonstrated by Permittees without pre-existing programs.

Fairness:

Given the investments that Permittees with pre-existing programs have made over the past several years, a basic question of fairness applies to the decision to approve the programs. Had Central Coast Water Board staff not approved their pre-existing programs, the Permittees would not have benefitted from being proactive, committing public funds, and preparing and training their staff. While fairness is a consideration, it is not the basis for approval of pre-existing programs, which in the final analysis must be as effective as the Draft PCRs in protection watershed processes and beneficial uses.

In addition to these three reasons, Central Coast Water Board staff also points out the potential inefficiency and ineffectiveness in allowing Permittees to pursue a different set of post-construction requirements:
- Permittees have been diligently getting ready to implement the Draft PCRs; the time and resources applied in preparing to implement the Draft PCRs would be wasted and Permittees would likely ask for even more time to prepare to implement an alternative approach, causing further delays.
- Allowing cities to use any of the pre-existing approaches would result in inconsistent standards and approaches throughout the region; something the development community often opposes.
- The pre-existing programs are often less flexible than the Draft PCRs, and such inflexibility can lead Permittees that lack a high level of experience or commitment in implementing the pre-existing programs to allow for inappropriate exemptions and exceptions, resulting in inadequate protection of watershed processes, beneficial uses, and water quality.

■ **County of Santa Barbara – 4**

Timing And Applicability

The timing to implement the PCRs on new projects is very awkward. The PCRs apply to projects that have not yet "received first discretionary/ministerial approval". This is a cumbersome point for both the Permittee, in the timing of application review, and for the developer, in project design. Much planning effort has already gone into design and review, with missed opportunities for site design measures. It will create challenges for the hundreds of projects affected.

Timing would be clear and vastly more realistic if the PCRs applied at time of application submittal.

Also, properties rebuilding after disasters should be exempt from the proposed regulations as these measures are not needed to insure public health and safety.

Recommendation: Revise to apply PCRs at time of application submittal.

~~(1) Discretionary Projects –~~ The Permittee shall apply the Post-Construction Requirements to **all new applications for both discretionary and ministerial permits**. ~~those projects that have not received the first discretionary approval of project design.~~

~~(2) Ministerial Projects – If the project is only subject to ministerial approval, the Permittee shall apply the Post-Construction Requirements to those projects that have not received any ministerial approvals. If the ministerial project receives multiple ministerial approvals, the Permittee shall apply the Post-Construction Requirements to the first ministerial approval. Ministerial approvals include, but are not limited to, building permits, site engineering improvements, and grading permits.~~

Recommendation: Revise as follows.

Under B(1) Regulated Projects (p. 1), add provision for disaster rebuilds.

b) Regulated Projects do not include:

xii. Properties rebuilding after disasters that are within the same footprint and have no increase in impervious area

Staff Response to Comment Santa Barbara County – 4
See Staff Response to Comment Carpinteria – 4.

Projects that are rebuilt after disasters have to adhere to updated stormwater management requirements, just as these sites would have to adhere to updated building standards. If a property owner is reconstructing its site, Central Coast Water Board staff considers this an appropriate time to reassess stormwater management strategies to come into alignment with current regulations. The PCRs include an exception in Section B.1.b which specifies that Regulated Projects do not include, "Repair or reconstruction of the road because of slope failures, natural disasters, acts of God or other man-made disaster."

■ **County of Santa Barbara – 5**
Special Circumstances
Projects that discharge into a concrete-lined, continuously armed, or continuous underground storm drain system all the way to a large lake, river, or the ocean, are provided certain exemptions. Similar exemptions are provided for projects that discharge into an "Intermediate Flow Control Facility" such as a groundwater recharge basin, which regulates flow volumes and durations to levels that protect beneficial uses of receiving water.
The purpose of the exception is this:

> The Special Circumstances designation exempts a Regulated Project from Runoff Retention and/or Peak Management Performance Requirements where those Performance Requirements would be ineffective to maintain or restore beneficial uses of receiving waters.

These exceptions make sense. However, the exceptions are limited to projects in certain Watershed Management Zones. Some projects would have to retain volume where the downstream receiving water would not be affected. In these cases, the requirements would be "ineffective to maintain or restore beneficial uses".
The only reason to require retention on projects designated as Special Circumstances might be the *possibility* of some future instream project, such as a channel restoration plan, that would remove the hardened channel or pipe. However, there's no possible benefit for projects that discharge to an "Intermediate Flow Control Facility".
Retention will be managed under Performance Requirement No. 2 for Water Quality Treatment. That requirement mandates retention-based measures to treat storm water quality as top priority. Therefore, there is no benefit to watershed processes "to maintain or restore beneficial uses" by including the retention requirement <u>in addition</u> to the water quality treatment, regardless of the project size.

Recommendation: Exempt retention requirements for all Regulated Projects with Special Circumstances (and make appropriate formatting revisions). Remove language referring to project size and Watershed Management Zone.

> b) Performance Requirements for Highly Altered Channel and/or Intermediate Flow Control Facility Special Circumstances:
> ~~i) For Regulated Projects that:~~
> ~~1) create and/or replace >22,500 square feet of impervious surface; 2) are located in WMZs 1, 2, 5, and 8, and those portions of WMZs 4, 7, and 10 that overlie a designated Groundwater Basin:~~
> ~~(1) Water Quality Treatment (Performance Requirement No. 2)~~
> ~~(2) Runoff Retention (Performance Requirement No. 3)~~
> ~~ii) For Regulated Projects that:~~

~~1) create and/or replace >22,500 square feet of impervious surface; and 2) are located in WMZs 3, 6, and 9, and those portions of WMZs 4, 7, and 10 that do not overlie a designated Groundwater Basin:~~

(1) Water Quality Treatment (Performance Requirement No. 2).

Staff Response to Comment Santa Barbara County – 5

Performance Requirement No. 3 for Runoff Retention is not required for all Special Circumstances projects that create and/or replace greater than or equal to 22,500 square feet of impervious surface. It is reserved for such projects occurring in Watershed Management Zones where infiltration is a dominant watershed process. While protecting a hardened channel from peak flows is likely unnecessary and the Peak Management Performance Requirement can be reasonably suspended for projects that discharge to hardened channels, retention of runoff volume on project sites in Watershed Management Zones where infiltration is a dominant watershed process supports other beneficial uses and is justified. For example, retention results in greater pollutant removal than flow-through treatment measures; it prevents thermal impacts of runoff from impervious surfaces entering receiving waters; and it ensures that any potential future restoration of hardened channels is supported by subsurface flows providing baseflow to restored streams and their associated aquatic life beneficial uses.

Central Coast Water Board staff concedes that restoration of beneficial uses in hardened channels is likely to require work in the channel (e.g., removal of concrete, daylighting culverted streams, introducing sinuosity and coarse sediment, establishing riparian vegetation) in addition to restoration of a flow regime supporting those beneficial uses. However, based on an abundance of evidence from post-project evaluations of channel restoration projects, channel restoration projects that seek to restore hydrologic function should in fact make watershed processes a primary consideration, or the restoration goals of the project are unlikely to be achieved.

■ **County of Santa Barbara (Dan Cloak) – 6**

To: Cathleen Garnand, County of Santa Barbara
From: Dan Cloak
Subject: Proposed Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region (draft released 8 April 2013)
Date: 9 May 2013

Summary

The Post Construction Requirements (PCRs) contain significant technical flaws. Many of the requirements are ambiguous and subject to interpretation. Because of these technical flaws and ambiguities, the PCRs are likely to be, overall, less effective in controlling the impacts of development on streams and other receiving waters than the requirements now in effect (for Phase I municipalities) in some other regions of the state. The PCRs are also likely to be less effective, overall, in preserving watershed processes than the requirements of Provision E.12 in the statewide Phase II municipal stormwater NPDES permit.

Issue #1: The criteria for on-site retention do not allow Permittees to take into account differing pre-development hydrology of proposed development sites.

Following a well-intentioned—but misdirected—aim of simplicity, the PCRs are written to mandate retention of runoff equal to the volume of either the 85th percentile or 95th percentile storm. These criteria are applied without regard to the pre-project or pre-development hydrologic or geologic characteristics of the specific development site. This is counter to the

intent of the Joint Effort, which sought to develop a program that would preserve or restore pre-development watershed processes.

The PCR criteria yield anomalous results. For example, under the PCR criteria it may be easier, and less expensive, to develop highly permeable sites than to locate development on less-permeable soils. This is because, by some of the allowed methods of calculation, a smaller facility would be needed to infiltrate the volume of an 85th or 95th percentile storm on a highly permeable site, and a larger facility would be needed on a site with less-permeable soils.

This is the opposite result from that of hydromodification management requirements in effect for Phase I municipalities in Region 2 (San Francisco Bay Area), in Region 9 (San Diego), and Region 5 (Central Valley). In those criteria, differences in pre-project or pre-development runoff volume, rates, and durations are taken into account. Continuous simulation analysis of pre-project and post-project flows are conducted and facilities are sized so that post-project flow rates and durations are kept within the flow rates and durations that existed in the pre-project or pre-development condition. This requires more infiltration on sites with permeable soils and less infiltration (allowing more runoff) on sites with less-permeable soils.

Provision E.12 in the statewide Phase II municipal stormwater permit takes a simpler approach, but also accounts for differing pre-project or pre-development conditions. Provision E.12.e.ii.(f) includes a mandate that bioretention facilities be sized consistently by *area*—that is, facilities must have an area roughly equal to 4% of tributary equivalent impervious area. This area-based criterion takes into account that in permeable soils, the facility will infiltrate relatively more runoff, and in less-permeable soils will infiltrate less runoff, in each case trending toward a match with the pre-project or pre-development condition. In this way, the Provision E.12 criteria passively adapt the facility performance to consider site-specific contributions to pre-development watershed processes. Importantly, the 4% criterion is implementable with a minimum of exceptions (See Issue #3, below).

In Section B.4.d.vi of the PCRs, "Hydrologic Analysis and Structural Stormwater Control Measure Sizing," it appears to have been intended to allow, as an alternative, a "locally/regionally calibrated continuous simulation model that results in equivalent optimization of on-site runoff volume retention." The purpose of continuous simulation is to facilitate analysis of the entire range of storm sizes and antecedent conditions over a long period (30 years or more). This allows comparison of a site's pre- and post-project hydrologic characteristics and the resulting influence on watershed processes over time. The language in PCRs Section V.4.d.vi. is obviated by the language in PCRs Section B.4.c., which mandates retention of the volume of a specific storm (85th percentile or 95th percentile) regardless of whether a specific site in its pre-development condition has highly permeable soils or impermeable soils.

Staff Response to Comment Santa Barbara County (Dan Cloak) – 6
Hydromodification management requirements in effect for Phase I municipalities in San Francisco Bay Area, in San Diego, and Central Valley require post-project flow rates and durations be kept within the flow rates and durations that existed in the pre-project or pre-development condition. These flow rate and duration controls do not necessarily reduce actual runoff volumes associated with new and/or replaced impervious surfaces, and may thereby fail to address watershed processes such as base flow that are addressed by the Draft PCRs' volume based approach and which are central to the objective of protecting water quality and beneficial uses within the Central Coast Region.

Furthermore, the estimates of pre-development conditions upon which these requirements are based, are developed through continuous simulation modeling at both regional and site scales. See Staff Response to Comments: CASQA – 6, Goleta – 9 for Central Coast Water Board staff's discussion of weaknesses of basing requirements on continuous simulation models at this time.
See Staff Response to Comments Santa Barbara County (Dan Cloak) – 9 and Wallace – 10 regarding the 4% sizing factor.

■ **County of Santa Barbara (Dan Cloak) – 7**
Issue #2: The allowable methods for calculating facility sizes will yield highly uncertain and variable results.
Attachment D to the PCRs allows a "routing method" for sizing retention facilities. Under the routing method, the response of an infiltration facility to the runoff hydrograph produced by a design storm (85^{th} percentile or 95^{th} percentile storm) is tracked in 6-minute increments. For each time increment, the routing method tracks the volume of inflow to the facility, the volume stored within the facility, and the volume infiltrated into the ground. The calculation is iterated to find the minimum storage volume required to hold and then infiltrate the design storm.

Under this method, facility sizes will be very sensitive to the rate at which runoff infiltrates into the ground. This is especially true for less-permeable soils, where estimates and test results can vary by 50%-100%. For example, in a site with clay soils, infiltration rate tests and estimates from the same site could vary from 0.05 to 0.1 inch/hour. The resulting facility size calculation would likewise vary by a factor of 2. This creates substantial uncertainty for applicants and will require municipal staff to make judgments under pressure.

Staff Response to Comment Santa Barbara County (Dan Cloak) – 7
The routing method is an accepted method within contemporary engineering/design practice. Its sensitivity to variations in infiltration rates is intrinsic to the method. Because of this sensitivity, designing engineers are inclined to obtain the most accurate estimates of infiltration rates available at a reasonable cost.

■ **County of Santa Barbara (Dan Cloak) – 8**
Issue #3: The exceptions to sizing requirements are poorly targeted.
The facility sizes that will result from the PCR criteria will be onerous to developers and will limit much-needed economic development, particularly in already-urbanized areas where land values are higher. Special consideration is needed for already-urbanized areas, lest the PCRs create strong disincentives for development within existing urban boundaries and unintentionally promote sprawl.

The PCR requirements generally oversize retention facilities and the PCR's special exceptions for already-urbanized areas are clearly needed. However, as written, the special exceptions in the PCRs are arbitrary and poorly targeted, and in some cases render the PCRs less protective than requirements in effect in other regions—and also less effective than the requirements that will be in effect statewide under Provision E.12.

This is a poor trade-off. Large storms are infrequent and represent only a small proportion of total runoff volume, total pollutant load, hydromodification impacts, and overall impacts on watershed processes. As shown by continuous-simulation modeling and verified by *in situ* monitoring, for bioretention facility sizes larger than about 4% of tributary area, the incremental additional storage and infiltration capacity is used infrequently. Therefore incrementally larger

facility sizes yield progressively diminishing returns. As sizes increase far beyond 4% of tributary area, the difficulty of fitting the facility into the development site increases, and the environmental costs of mining gravel and sand (and trucking these materials to the development site) also increase, without proportional increases in the effectiveness of runoff control.

The PCRs would be more effective in protecting watershed processes if the facility sizes were more reasonable and the exceptions and loopholes less prevalent. Examples follow.
PCR Section B.3.a. allows a "reduced impervious area credit" for redevelopment projects that have post-project impervious area less than pre-project impervious area. Instead of discharging runoff from these areas without treatment, the runoff could be routed to reasonably sized treatment and retention facilities—if reasonably sized facilities were allowed by the PCRs.
Further, Section B.3 allows the use of non-LID treatment systems on development projects with up to 15,000 square feet of impervious area, stating only a "preference" that LID be used. In contrast, Provision E.12 requires LID treatment and baseline hydromodification management for all projects with 5,000 square feet or more of impervious area, and includes no "reduced impervious area credit."

PCR Section B.4.b.i. allows a reduction of 50% in the amount of runoff retained for runoff from replaced, rather than new, impervious surfaces. The facility sizing mandated in the following Section B.4.b.i.c. results in facilities which may be oversized to a greater or lesser degree; the 50% reduction in this volume will result in facility sizing which could still be, in some cases, larger than what would be required under Provision E.12—and in other cases will be substantially smaller. Instead of undersizing some facilities on redevelopment sites, the Section B.4.b.i.c. criteria could be better optimized so that facilities in general are not oversized. Then the arbitrary 50% reduction could be dispensed with.

PCR Section B.4.b.ii. eliminates the retention requirement for redevelopment projects within "Urban Sustainability Areas" (USAs), requiring only that existing on-site retention be maintained. The Urban Sustainability Area "may only encompass redevelopment in high density urban centers… that are pedestrian-oriented and/or transit-oriented development projects intended to promote infill of existing urban areas," but must be proposed by the Permittee and approved by the Executive Officer. Notably, the Permittees' USA proposals need not include restrictions on the size of projects or parcels eligible for elimination of the retention requirement. This is considerably more uncertain and unwieldy than the corresponding requirement in the Phase II permit, and is likely to result in a higher prevalence of non-retention-based, non-LID facilities in Region 3 than in the rest of the state. Provision E.12.e.ii.i. in the Phase II permit limits such exceptions to "projects creating or replacing an acre or less of impervious area, and located in a pedestrian-oriented commercial district… and having at least 85% of the entire project site covered by permanent structures…. [and] Facilities receiving runoff solely from existing (pre-project) impervious areas; and…. [and] Historic sites, structures or landscapes…." which is a much more restrictive set of criteria.

PCR Section B.4.e. allows an "off-ramp" if it is technically infeasible to retain the volume produced by the 85th or 95th percentile storm. In this case a development project may comply with the PCRs if it dedicates "no less than ten percent of the Regulated Project's Equivalent Impervious Surface Area to retention-based Stormwater Control Measures." However, neither Section B.4.e. nor the referenced Attachment E state what a definition of the term "retention-based Stormwater Control Measures." Apparently, it would be possible for a development project to comply by incorporating facilities to retain some arbitrary lesser volume and by meeting the 10% area requirement with depressed landscaped areas, pervious pavement, and

the like. Again, by this measure the PCRs are a poor substitute for the clearer and less loophole-ridden requirements of the Phase II permit's Provision E.12.

Staff Response to Comment Santa Barbara County (Dan Cloak) – 8

Central Coast Water Board staff does not agree, and the comment presents no information to support the contention that the Draft PCRs are onerous to developers and will limit much-needed economic development, and promote sprawl (See Staff Response to Comment Lompoc – 7).

The comment identifies ways in which the Draft PCRs differ from the post-construction requirements in Section E.12 of the Phase II General Permit. In some cases the Draft PCRs are less stringent and in others more stringent. Regardless, the Phase II General Permit provides the option (Provision E.12.k.) for Regional Water Boards to adopt alternative post-construction requirements. The Draft PCRs represent substantial effort on the part of stakeholders and Central Coast Water Board staff to develop regionally appropriate requirements. The expectation that they will mirror Section E.12 is misplaced.

The examples provided in the comment cite specific provisions of the Draft PCRs that were developed to address stakeholder interests: 50 percent reduction in runoff retention for replaced surfaces; reduced retention requirements in Urban Sustainability Areas; dedication of 10 percent of equivalent impervious area to retention-based stormwater control measures. Central Coast Water Board staff considers these provisions to be a good balance of stakeholder interests and water quality benefit.

The comment provides examples of purported problems with the provisions by presenting generally inappropriate comparisons between the Phase II General Permit's provisions and those of the Draft PCRs. The Phase II General Permit Provisions for Storm Water Treatment Measures and Baseline Hydromodification Management Measures are in essence treatment requirements – the retention achieved is limited because an underdrain is allowed. This Phase II General Permit provision compares reasonably well to the Draft PCRs Performance Requirement No. 2: Water Quality Treatment (See Staff Response to next comment). However, comparing the Phase II Permit Storm Water Treatment Measures and Baseline Hydromodification Management Measures to Draft PCRs Performance Requirement No. 3 for Runoff Reduction is not appropriate. Performance Requirement No. 3 is triggered at the 15,000-square foot threshold and explicitly requires retention of a quantifiable volume of runoff (up to that produced by the 95th percentile 24-hr rain event) below any underdrain or outlet. This requirement will be far more effective in addressing hydromodification than the Phase II Permit's provision which provides only the storage allowed within the one foot of gravel beneath the underdrain of a facility sized for runoff from an 85th percentile 24-hr rain event.

In another example the comment cites the exception in Phase II Permit Provision E.12.e.ii.i, which states that in lieu of bioretention, other types of biotreatment or media filters may be used to treat runoff in historic districts, pedestrian-oriented commercial districts, etc. The comment compares this provision to the Draft PCR's Urban Sustainability Area provision and suggests the Draft PCRs are more uncertain and unwieldy, and will lead to less success in implementing retention-based/LID facilities. Again, the comment inappropriately compares the Phase II Permit's Stormwater Treatment and Baseline Hydromodification Management Measures to the more robust PCR Runoff Retention Requirements. The Draft PCR provisions reduce retention requirements in USAs, but provide no exemption for the Water Quality Treatment Performance Requirement. Phase II Permit provision E.12.e.ii.i is less stringent than the Draft PCRs in this regard, because E.12.e.ii.i allows any project creating less than an acre of impervious area in a

historic district or a pedestrian-oriented zone to do no retention, while the PCRs require projects in USAs to do offsite mitigation for any new impervious surfaces created for projects triggering a 15,000-foot new/replaced impervious surface threshold. Furthermore, the definition of USAs in the PCRs is more restrictive than the conditions outlined in Phase II Permit provision E.12.e.ii.i.

In general, and in part because of the inappropriate comparisons made, Central Coast Water Board staff does not find the examples support the comment's speculation that the Draft PCRs are "more uncertain and unwieldy" than corresponding requirements in the Phase II permit, or that the Draft PCRs are likely to result in more non-retention-based, non-LID facilities in Region 3 than in the rest of the state.

"Retention" is a conventional term used in drainage designs to indicate terminal or indefinite storage of runoff. Typically stormwater in retention facilities is released through evaporation/evapotranspiration and infiltration. Because the Draft PCRs utilize the term "retention" in the conventional sense, Central Coast Water Board staff does not find it necessary to further define "retention-based Stormwater Control Measures" in the Draft PCRs. Central Coast Water Board Staff recognizes implementation of post-construction requirements will be a new experience for most Central Coast Permittees and staff intends to continue working closely with Permittees and other stakeholders throughout implementation of the Draft PCRs to address issues of technical feasibility.

■ **County of Santa Barbara (Dan Cloak) – 9**

Issue #4: The PCR criteria for bioretention treatment systems are not as effective the Provision E.12 criteria for bioretention treatment systems.

Specifically, Provision E.12.e.ii.(f) sets a clear standard for LID by specifying that stormwater treatment measures and baseline hydromodification management measures must be "at least as effective as a bioretention system with the following design parameters…." The design parameters are spelled out in detail. The basis for demonstrating equivalent effectiveness to this design is also spelled out: equivalent effectiveness means an equal or greater amount of runoff infiltrated or evapotranspirated, equal or lower pollutant concentrations in runoff that is discharged, equal or greater protection against shock loadings or spills, and equal or greater accessibility and ease of inspection and maintenance.

PCR Section 3.b. borrows much language from Phase II permit Provision E.12.e.ii.(f) but omits the specific standard for equivalent effectiveness. Also, PCR Provision 3.b. incorporates a preference for facilities "designed to retain stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm," without including or referencing design standards for this preferred option. Experience throughout California has demonstrated the difficulty of ensuring proper design and construction of stormwater management facilities. Because the PCRs do not specify a design standard and a basis for demonstrating equivalence, the PCRs will likely be less successful than Provision E.12 when it comes to ensuring installation of effective stormwater management facilities in the field.

PCR Section 3.b.ii.(3) also specifies a minimum planting media depth of 24 inches, as compared to an 18-inch depth required in Phase I permits in Region 2, Region 8, and Region 9, and by Provision E.12 in the statewide Phase II permit. The additional depth appears to be arbitrary, and a review of literature cited in the Technical Support Document does not make a convincing case that additional depth would provide additional water quality benefit when applied to new development controls on California's Central Coast.

Staff Response to Comment Santa Barbara County (Dan Cloak) – 9

The relevant provisions in the PCRs compare well to those in the Phase II Permit. The Draft PCRs require applicable projects to treat runoff using the onsite measures below, listed in the order of preference (highest to lowest):

i) Low Impact Development (LID) Treatment Systems – Implement harvesting and use, infiltration, and evapotranspiration Stormwater Control Measures. These systems shall be designed to retain stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event, based on local rainfall data.

ii) Biofiltration Treatment Systems – Implement biofiltration treatment systems using facilities that must be demonstrated to be at least as effective as a biofiltration treatment system with the specific design parameters (virtually identical to Phase II specifications, but omitting the "sizing factor" of 4% of tributary impervious area, and increasing the minimum planting medium thickness from 18 to 24 inches (see discussion below).

iii) Non-Retention Based Treatment Systems sized using standard volume or flow hydraulic design basis.

Central Coast Water Board staff does not believe referencing a design specification for i, above is necessary, since the requirement itself is straightforward and because there is an abundance of guidance on designing BMPs and Stormwater Control Measures to effectively harvest and use, infiltrate, and/or evapotranspire runoff. The Draft PCRs' preference for treatment measures that retain runoff onsite through these mechanisms (option i) is based on the premise that 100 percent of the pollutant load from an 85th percentile 24-hr event is retained on-site through such measures, since no runoff leaves the site. Options ii. and iii. are both flow-through treatment methods, which result in discharge from the site and which therefore cannot be expected to achieve 100 percent pollutant removal from the qualifying runoff event.

Based on the comment, Central Coast Water Board staff has amended the Draft PCRs to include the Phase II Permit's measures for demonstrating equivalent effectiveness of biofiltration treatment systems.

Central Coast Water Board staff modified the specification of minimum planting medium thickness (depth) in biofiltration systems from that specified in designs used commonly in parts of the San Francisco Bay Area and now indicated in the Phase II General Permit. A 24-inch minimum planting medium depth, as opposed to the 18-inch minimum depth indicated in these other specifications, is required because of current uncertainty of performance for bioretention systems with under-drains. Questions remain about the functional roles of plants and specified soils mixes in California's arid climate, and providing greater soil media depth can provide improved performance in the interim period, as California research is carried out and regional guidelines are developed. Technical guidance for designing bioretention facilities is available from the Central Coast LID Initiative. The guidance includes design specifications and plant lists appropriate for the Central Coast climate.

See Staff Response to Comment Wallace – 10 regarding the 4% sizing factor.

■ **County of Santa Barbara (Dan Cloak) – 10**

Issue #5: The Allowance for Pre-Existing Programs Creates Inconsistencies

The burdensome nature of the PCR criteria also fostered a need to allow some municipalities to seek the Executive Officer's permission to exempt themselves from the PCRs, as allowed in PCRs Section G, on the basis that their pre-existing post-construction stormwater management requirements are as effective as the PCRs in maintaining watershed processes. For the reasons

presented above, the relative effectiveness of the PCRs in maintaining watershed processes is uncertain and difficult to ascertain. Regardless of relative effectiveness, the inconsistencies themselves—developments on opposite sides of the same street could have radically different post-construction requirements—tend to undermine regionwide implementation. It would make more sense to revise the PCR criteria to be less burdensome, while still achieving the objective of maintaining watershed processes. The less-burdensome criteria could then be implemented consistently throughout the Region.

Staff Response to Comment Santa Barbara County (Dan Cloak) – 10
See Staff Response to Comment Santa Barbara County – 3

■ **County of Santa Barbara (Dan Cloak) – 11**
When the PCRs were first conceived (5 to 6 years ago), it was known that reissuance of the statewide Phase II Municipal Stormwater NPDES permit would be delayed, and it was unknown what the new development requirements in that permit might be. Since that time, development of the PCRs and of the Phase II requirements have proceeded on parallel tracks, with both documents going through significant changes with each iteration. The Phase II requirements have been adopted by the State Water Board and are to be implemented throughout the state by July 1, 2015.

To date, there has been no review or technical analysis of whether Provision E.12 in the Phase II permit fully meets the objectives of the Joint Effort in the Central Coast Region, or of whether simple incremental changes to Provision E.12 would meet those objectives.

Given the technical flaws in the PCRs as currently drafted, and the benefits of statewide consistency, the Central Coast Water Board should be encouraged to direct that such a review be conducted before the Board takes further action on the PCRs.

Staff Response to Comment Santa Barbara County (Dan Cloak) – 11
Provision E.12.k. of the Phase II General Permit specifically requires small MS4s subject to the General Permit to comply with post-construction stormwater management requirements based on a watershed-process approach developed and approved by a Regional Water Board following a public process. The Draft PCRs, if approved by the Central Coast Water Board will be in compliance with the Phase II General Permit.

Furthermore, Central Coast Water Board staff remained engaged with State Water Board staff in the development of multiple iterations of the Phase II Permit and at no time considered the post-construction requirements of the Phase II Permit to be consistent with the watershed process based approach being undertaken through the Joint Effort. A review or technical analysis of whether the Phase II Permit meets the objectives of the Joint Effort would yield the obvious conclusion that it does not. This is primarily because the Phase II Permit does not specify an amount of runoff volume reduction from development projects. The biofiltration device designed according to specifications in the Phase II Permit would discharge via an underdrain an unquantified amount of runoff entering the facility. This is expected, since the device is primarily for treating runoff associated with the 85th percentile 24-hr treatment criterion, and is not designed to meet a specific retention objective. The PCRs on the other hand do include quantifiable retention objectives that support watershed processes beyond the treatment objectives addressed by the Phase II Permit.

Central Coast Water Board staff expects resources would be better spent on the annual reporting program required by the Phase II Permit that "involves Regional Board staff and State Board staff to inform statewide watershed process based criteria." (Provision E.12.k)

■ **Penfield & Smith for University of California, Santa Barbara – 1**
On behalf of the University of California at Santa Barbara (UCSB) we respectfully request that a portion of the UCSB main campus be reclassified as Watershed Management Zone 4.

Note from Central Coast Water Board staff: The comment letter is a request to re-designate the Watershed Management Zone (WMZ) for the main campus of UCSB. The comment letter includes a rationale and several exhibits to support the request and concludes by saying:

"Since the majority of the campus drains to a marine nearshore and not a stream or wetlands, is not underlain by a groundwater basin, and resides over a geological setting in which infiltrated water is unable to reach a groundwater basin; it better fits the description of WMZ 4 as characterized in Section 2.5.2 in Appendix E of the Post Construction Requirements and not WMZ 1."

Staff Response to Comment Penfield & Smith – 1
Watershed Management Zones were identified using the best available GIS information for the region. In most locations, conditions are relatively uniform over a large area, and the mapping is quite accurate. However, in other locations, complex geology, flat topography with indeterminate drainage pathways, or artificial drainage courses may create conditions in which the regional Watershed Management Zone designation is not appropriate. Where a municipality believes that the mapped Watershed Management Zone designation is in error, Central Coast Water Board staff will review and consider modifications to the Watershed Management Zone designations based on the municipality's site-specific geologic or topographic investigations, conducted at an appropriate scale.

The commenter, on behalf of UCSB, has presented such localized information that can potentially be used to rectify Watershed Management Zone boundaries and designations. Upon adoption of Draft Resolution R3-2013-0032, Central Coast Water Board staff will be able to review the information submitted on UCSB's behalf and assist in rectifying the Watershed Management Zone boundaries and designations as appropriate.

■ **American Institute of Architects California Council – 1**
For design professionals clarity and consistency in building codes and regulations is critical to achieving a successful project. The AIACC has a long history of supporting this principal marked by its role in sponsoring AB 47 (Eastin) in 1991. AB 47 reestablished the role of the California Building Standard Commission to bring all building code development in California into one location – not to control the process, but rather for the expressed purpose of assuring a coordinated process. And I am pleased to say that more than 20 years later the process has been an unequivocal success.

How this relates to the Post-Construction Rules contained in Draft Resolution No. R3-2013-0032, and what is particularly troubling about the process being implemented, is that they are being drafted as regulations, but are in fact building codes, without benefit of the building code

adoption process. It is our concern that because they are being developed in this manner there is an almost certain possibility that this will lead to conflicts with the California Building Code.

Building code conflicts are not just an issue of concern to design professionals; they are of a significant concern to their clients as well. Conflicts cause delays, and delays come at the expense of both time and money. On a local level, delay translates into lost employment opportunities for the community. It was for these very reasons that AB 47 became law, insuring that California's building codes would be created and coordinated in a manner that assured they were for the public good.

Building standards submitted to the California Building Standards Commission for approval are required, by Health and Safety Code Subsection 18930(a), to be accompanied by an analysis which will, to the satisfaction of the Commission, justify their approval. The approval of these proposed building standards is justified as follows:

1) The proposed building standards do not conflict with, overlap, or duplicate other building standards.
2) The proposed building standards are within the parameters established by enabling legislation, and are not expressly within the exclusive jurisdiction of another agency.
3) The public interest requires the adoption of the building standards.
4) The proposed building standards are not unreasonable, arbitrary, unfair, or capricious, in whole or in part.
5) The cost to the public is reasonable, based on the overall benefit to be derived from the building standards.
6) The proposed building standards are not unnecessarily ambiguous or vague, in whole or in part.
7) The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate. (Health and Safety Code Section 18930 requires a statement of inadequacy of a national specification, published standard, or model code if it does not adequately address the goals of the state agency, OR a statement informing the Commission that no national specification, published standard, or model code that is relevant to the proposed building standards exists.)
8) The format of the proposed building standards is consistent with that adopted by the Commission.
9) The proposed building standards, if they promote fire and panic safety as determined by the State Fire Marshal, have the written approval of the State Fire Marshal.

These straightforward requirements have served to level the field, ensuring that individual members of the public, as well as publicly traded corporations, are treated as equals with each having equal opportunity to participate in the code development process. Underscoring the importance of local input, I have been provided a copy of AIA Monterey Bay's Post-Construction Requirements Comments. AIA Monterey Bay is one of the AIACC's 22 state-components and we are honored to support them in their efforts.

In addition to voicing concerns similar to the AIACC's, AIA Monterey Bay has also identified several items of concern within the proposed Post-Construction Rules, which give specific and further credence to why coordination between local regulations and existing building codes, and this matter should be thoroughly vetted.

Staff Response to Comment American Institute of Architecture CA Council – 1

The Draft PCRs contain runoff retention requirements that are objective criteria which Permittees must require regulated project applicants achieve when designing their management practices [i.e., structural Stormwater Control Measures, or BMPs]. The criteria are not separate Stormwater Control Measures or BMPs and are not codes requiring specific designs. The runoff retention requirements tell what magnitude of storm event the BMPs must be designed to retain or infiltrate. They do not specify the Stormwater Control Measures or BMPs that must be employed.

The Draft PCRs provide many adjustments when technical infeasibilities exist on a site, so Central Coast Water Board staff does not anticipate the California Building Code will conflict with the Draft PCRs. Additionally, Draft PCRs Section B.2.a(v) specifies that Regulated Projects implementing site design measures to direct runoff from impervious surfaces must be consistent with California Building Code.

■ **American Institute of Architecture, Monterey Bay – 1**

General Concerns:

1. The AIA has long stood for having clear and understandable codes. There is a well-established process for Code Adoption, which is through the Building and Standards Commission, often referred to as the "Code Adoption Process". These proposed regulations appear as building codes, yet they are coming into existence as regulation rather than through the tried and true code adoption process. This creates the situation where this regulation could be in conflict with either the current Building Codes, or with future Building Codes. Also, by not being in the Codes, additional confusion is created to owners and in the marketplace. In fact, there is a likelihood that these regulations WILL BE in conflict with Code, at some point. This is the main reason why it is so dangerous to pass building codes as regulation. These types of future inconsistencies can ultimately compromise the structural integrity of structures, potentially risking life safety. Life safety is traditionally the number one concern in the practice of architecture, and should also be a top concern for the Regional Board.

2. Unnecessary complexity. These proposed rules are very complex, difficult to understand, and difficult to know how to implement properly.

3. Conflict with other Federal, State, Regional, and Local plans and policies. An example of this would be the extraordinary measures that are required of urban infill lots. Even though there may be development all around one of these lots, or that the lot itself may be being redeveloped to meet a local plan policy, these proposed rules require the redevelopment to implement potentially very costly measures. In fact, the required measures *may not even be possible* to implement on that project site, which may require the payment of fees to a jurisdiction in the hope that the jurisdiction can implement a program in that sub-watershed area. These Urban Sustainability Areas (USA's) do not currently exist, nor do any of them have the Region 3's Regional Board approval, all of which is required in order to establish one. All of this should be kept in mind when deciding if these proposed rules help or hinder the implementation of existing General Plans and other adopted urban development policies. It would be difficult to make a rational argument that urban infill or urban redevelopment is enhanced when and if these proposed rules come into effect.

4. We are very concerned for the public health, safety, and welfare. Standard practice in the industry has been to de-water built-up sites so that water does not cause any number of

potential problems. Examples of issues that could occur if water is now required to remain onsite include:
a. Differential settlement of foundations due to water softening the ground on one part of a site,
b. Water can trigger ancient landslides. Particularly in the complex geology of the Central Coast, there are many known ancient landslides and, we are sure, many unknown ancient landslides. Introducing water back into a site could have serious consequences and cause the failure of certain soils, potentially risking human life and safety.

5. For any part of these Rules which require any "discretionary" action, these Rules should NOT apply to ministerial projects. It is poor public policy to turn things that are currently ministerial into discretionary projects. Furthermore, this would have a potentially large impact on private property rights as well as local zoning codes, and would add tremendous complexity to a generally very cumbersome process.

Specific Comments:
1. We believe that these rules could be drastically simplified. An example is that if a Project site is less than 50% 'Site Coverage', then the requirements can be met on that site via prescriptive BMP's. As such, this would require certain practices to become the standard, and would negate the necessity of having ongoing monitoring or other costly ongoing expenses to a project. This example, of using a "Site Coverage" calculation as a method for being able to determine if a project site is likely to be able to meet the intent of these proposed rules, and then allowing a series of prescriptive BMP's to meet that requirement, is just one of several ways to simplify these complex proposed rules. At a public forum our AIAMB chapter held on these regulations, where Dominic Roques was kind enough to come up here and present, there seemed to be agreement that this methodology is a rational and easy to implement methodology that would meet the intent of these regulations. We believe a simple addition of this type of calculation, and then a simple checklist of items to be prescriptively applied, would both meet the intent of the rules and also add simplicity. One way to achieve this is to add to the definition of "Low-Impact Development" (LID), any development which has a Site Coverage of 50% or less of the site. One place to insert this language would be to Item 18, on Page 4. When you think about it, having these regulations be entirely based on size of impervious area, and to not factor in the size of the entire site, seems to separate these regulations from common sense. This percentage of development is an important factor when trying to maintain a certain hydrology for a site.

2. We appreciate the elimination of the seemingly arbitrary added factor that was in the first draft. Not only did this factor seem to appear out of nowhere, but it also had the effect of negating what otherwise seemed like, at least, a rational methodology. We believe it was very wise of you to remove this factor, the 1.963 number, entirely.

3. We have serious concerns with the comments in Item 20 on Page 5. Here the draft Resolution states, in part, "….and 4) ensuring that each drainage feature is adequately maintained *in perpetuity*." (emphasis added) In a perfect world this may be arguable, however in the real world there are a bundle of goals that need to be carefully balanced. While it is admirable that these regulations consider themselves so urgent that they not only avoid the "Code Adoption Process", which could cause conflicts and potential negative impacts to Life-Safety, but they are so critical that they must be assured of full operation *forever*. This goal creates a whole series of problems. First is the precedent setting nature of it: If stormwater retention must be ensured to be maintained in perpetuity, what about other elements of a site and structures? Should the appliances be checked annually for not only operations but that they haven't lost any of their original efficiency? What about insulation….shouldn't that be verified

that it has maintained its advertised R-value in perpetuity? How about the Landscaping requirements… should not the plants and trees be guaranteed they will always be there? Furthermore, the method that would typically be used to provide for some action, in perpetuity, is a recorded restriction of some kind. These are often referred to as "clouds on title" as they present often unknown costs and obligations into the real estate transaction process. This could have a rather large impact on real estate sales in the future. Also, the issue of enforceability starts to become another separate issue. To at least be accurate, the phrase cannot be "in perpetuity" but rather "for the life of the structure". Each stormwater detention facility is responding to a project: If and when the project is replaced by another project, so too would the stormwater facilities that were tied to the first project. The concept of "in perpetuity" truly makes no sense. A more rational approach would be to have a time period, such as 10 years, for which some type of annual action is required.

4. Item 30, which talks about how this Resolution "is exempt from the provisions of the California Environmental Quality Act…" may or may not be legally correct. However, as a reality check, this Resolution will certainly have an impact on the environment, as well as potentially on life-safety. We have provided some evidence of this assertion in these comments.

CONCLUSION:
The Board of Directors of the AIAMB respectfully request that the Regional Board NOT adopt this Resolution. Instead, submit the stormwater rules into the normal Code Adoption Process via the Building and Standards Commission. In this manner the appropriate rules can become part of the Building Code, which includes the new California Green Building Code, known as CALGREEN. If the Regional Board decides it must adopt this Resolution, please consider adding a simple compliance method for projects which have a 50% or less "Site Coverage". We believe we can all agree that it should be simple and straightforward to keep the 85th percentile storm waters on a site that is no more than 50% disturbed. Also, we strongly encourage the Regional Board to remove references to "in perpetuity" for a number of reasons, but in particular to not negatively impact the real estate transaction process by clouding title, and to not create yet another enforcement mechanism or public entity that then has to track this stuff in perpetuity. Remember, it doesn't make sense since the correct language could have been "for the life of the structure", or "as long as the structure exists on that site". Finally, we believe this Resolution will have significant and measurable effects on both the natural and the built environments. We also believe these rules can negatively affect Life- Safety. For these reasons and others we request that a full Environmental Impact Report (EIR) be done to properly analyze and disclose to the public and the decision-makers the various impacts that are likely from the adoption of this Resolution.

Staff Response to Comment American Institute of Architecture Monterey Bay – 1
General Concerns:
1. See Staff Response to Comment American Institute of Architecture CA Council – 1.
2. Central Coast Water Board staff recognizes that the Draft PCRs are complex. The Draft PCRs address a wide range of project scenarios, types, and circumstances. The added detail to address these conditions resulted in lengthening the Draft PCRs. Central Coast Water Board staff plans to continue developing various guidance materials to assist Permittees with PCR implementation.
3. See Staff Response to Comment Goleta – 19.
4. The Draft PCRs include alternative compliance options for sites that demonstrate that geotechnical hazards cause technically infeasibility. However, also note: design professionals are incorporating retention-based Stormwater Control Measures into urban environments

throughout the world, and design professionals are developing creative solutions to some of the challenges raised in the comment.
5. See Staff Response to Comment City of Monterey – 1.

Specific Comments:
1. Central Coast Water Board staff is unclear exactly what the commenter is suggesting by this comment. There is a direct nexus between increased impervious surfaces and increased runoff volumes and rates and increased pollutant loading, which is why impervious surface area is used to define thresholds throughout the requirements. Central Coast Water Board staff does not understand what the commenter intends by the term, "site coverage". A Regulated Project demonstrating it only impacts half of its site, does not necessarily have sufficient justification to not comply with the Draft PCRs. Runoff from the developed portion of that Regulated Project site could still have negative water quality impacts. Note that Section B.4.d.iv in the Draft PCRs provides relaxation of the runoff retention performance requirements for undisturbed or planted areas on a site.
2. Comment noted.
3. The intent of the requirements to maintain Stormwater Control Measures in perpetuity is to ensure that any degradation to watershed health is mitigated for the long term. It is essentially a no net loss regulation. For example, if a bioretention facility is installed to retain runoff and attenuate pollutants generated by a parking lot, the owner of the site is responsible for continuing to treat and retain runoff for as long as the parking lot exists on that site. If the parking lot out-lives the bioretention system, then the owner must install a new bioretention system, or equivalent SCM, such that the owner is continuing to mitigate for the water quality impacts caused by that parking lot. These requirements are similar to flood control facility requirements. For example, if a Home Owners' Association has jurisdiction over a detention basin used for flood control, typically a municipality requires that Home Owners' Association to maintain that detention basin in perpetuity such that flood protection is provided so long as the housing development associated with the Home Owner's Association exists. If maintenance were only required for the life of the structure, and for any reason the structure was replaced, a strict interpretation of the requirement would be that no maintenance was required for the new structure. Central Coast Water Board staff proposes maintaining the "in perpetuity" language.
4. As the commenter points out in its comment, the Central Coast Water Board finds that the action to adopt the Resolution is exempt from the California Environmental Quality Act.

■ **CASQA – 1**
Based on its review of the Post-Construction Requirements, CASQA does find that these requirements rise to the level of statewide significance. Accordingly, we are compelled to provide specific comments on some of the provisions of the Post-Construction Requirements for the Central Coast Region.

In general, CASQA is very concerned with the apparent escalation in permit requirements being conducted by the various Water Boards' permit writers in drafting provisions for land development. Over the last few years we have seen increasing new development requirements in each municipal separate storm sewer system ("MS4") permit reissuance without allowing sufficient time to assess the impact/effectiveness of the prior development requirements. This lack of a cohesive approach to development standards has created an uneven playing field for communities and developers throughout the state. Furthermore, the clear absence of any consensus within the state on what are appropriate requirements for land development

(particularly with respect to hydromodification management) is damaging to the credibility of the requirements.

In general, CASQA is concerned that the Post-Construction Requirements being proposed are not properly supported by evidence in the record, and there are insufficient findings that bridge the analytical gap. The Draft Resolution proposes hydromodification requirements that are not supported by adequate findings or the evidence in the record. When adopting permit requirements, the Central Coast Regional Water Quality Control Board ("Central Coast Water Board") has a duty to "set forth findings to bridge the analytical gap between the raw evidence and the ultimate decision or order." Additionally, the findings must be supported by evidence in the record. The Central Coast Water Board has failed to satisfy these duties in the Draft Resolution. The findings in the Draft Resolution consist of general statements and broad conclusions related to a perceived need for post-construction hydromodification criteria. The findings do not explain the basis for each post-construction requirement proposed by the Central Coast Water Board or how they relate to Central Coast MS4s in particular. Further, the findings do not explain how the broad-scale watershed management zone ("WMZ") designations, which are the basis for the proposed Post-Construction Requirements, account for local differences in soils, topography, and other environmental conditions. Accordingly, the findings impermissibly fail to "bridge the analytical gap between the raw evidence and the ultimate decision or order."

Staff Response to Comment CASQA – 1

The analysis completed and the evidence compiled to develop the PCRs, described in the Technical Support Document, bridges the analytical gap and supports the following findings in Draft Resolution R-3 2013-0032, which find that:

Finding 19: controlling urban runoff through LID (i.e., methods focused on reducing runoff volume) is important;

Finding 20: some circumstances can limit the feasibility of retaining and infiltrating stormwater;

Finding 21: application of post-construction requirements to redevelopment holds the potential to partially mitigate existing and new impacts or urbanization;

Finding 24: infiltration and subsurface flow are the dominant hydrologic processes across the intact watersheds of the Central Coast region; and

Finding 25: the PCR's emphasis on protecting and restoring key watershed processes is necessary to create and sustain linkages between hydrology, channel geomorphology, and biological health necessary for healthy watersheds.

Central Coast Water Board staff has included ample evidence in the record supporting adoption of the proposed Resolution. The evidence presented in the Technical Support Document fully describes the development of the Watershed Management Zones and their basis in topography among other factors. Specific evidence addressing the analytical gap cited in the comment is discussed below. But more generally, the comment is predicated on a misconception about the purpose of Watershed Management Zones and how they are invoked in the Draft PCRs. Critically, the Draft PCRs invoke Watershed Management Zones to provide an objective for stormwater management (e.g., retain runoff, treat runoff, control runoff peak discharge) while through other provisions the Draft PCRs allow flexibility in how specific requirements apply to sites within a particular Watershed Management Zone. The Draft PCRs address soil variability, for example, by providing a path to compliance, including both on- and off-site options, for individual sites where soil conditions limit infiltration. The Draft PCRs provide reasonable alternatives to strict adherence to volumetric retention requirements on-site where conditions vary from the broader condition throughout the Watershed Management Zone in which projects are located.

An important line of evidence bridging the analytical gap between raw evidence and the Post-Construction Requirements is the linkage analysis found in Attachment E of the Technical Support Document: Methods and Findings of the Joint Effort. In the terminology of the Joint Effort, the "Linkage Analysis" is the characterization of the relationships between disturbance, dominant watershed processes, and receiving-water conditions. The conceptual framework underpinning the linkage analysis traces the physical attributes of a Watershed Management Zone to the watershed processes that control the movement and storage of water, sediment, pollutants, and organic matter; and finally to the resulting conditions of downstream (or, for aquifers, downgradient) receiving waters. Disturbance to those Watershed Management Zones can result in a new set of controlling watershed processes, which in turn result in alterations to the conditions of receiving waters.

This framework implies two primary "linkages"—the first, the association of specific slope and geologically defined Physical Landscape Zones with their associated key watershed processes; and the second, the relationship between those watershed processes and downstream receiving-water conditions. It also recognizes the importance of disturbance in those associations, which for the Joint Effort specifically focuses on areas and conditions affected by urbanization; and, subsequent to that understanding, the consequences for receiving-water conditions.

The dominant patterns, and the rare exceptions, of linkages were explored between Physical Landscape Zones and key watershed processes, and between watershed processes and the resulting conditions in downstream (or downgradient) receiving waters. As described above, the first such association (between Physical Landscape Zones and their key watershed processes) was evaluated observationally, using the presence or absence of surface-water channels and other signs of overland flow and surface erosion in a wide range of locales throughout the region. The second such association (between watershed processes and receiving-water condition) was evaluated largely by calculating IBI scores (using the protocol of the Southern California Index of Biotic Integrity; Ode et al. 2005) from the widely distributed benthic macroinvertebrate data set compiled by Central Coast Water Board staff, and evaluating the spatial distribution of high and low values to specific Physical Landscape Zones in the contributing watershed and to land-use disturbance, particularly urbanization.

■ CASQA – 2

The Central Coast Water Board has attempted to satisfy the legal obligation to clearly set forth findings by incorporating a technical document. Assuming that incorporating Attachment 2 into the Draft Resolution could ever satisfy the requirement to explain the basis for regulatory requirements in the findings, the findings still fall below the legal standard. Attachment 2 generally discusses the regulatory context and environmental conditions before briefly addressing the categories of the Post-Construction Requirements, rather than discussing the many specific requirements of each category. For example, with regard to the requirement to retain runoff from events up to the 95th percentile 24-hour rainfall event, no findings explain how the requirement is technically or economically feasible for the localities in which it is being applied. Attachment 2 directs readers to an April 8, 2013 study, which evaluated stormwater control measure sizing criteria. This study does not contain findings explaining how the retention requirement is technically or economically feasible.

Staff Response to Comment CASQA – 2

Finding 28 addresses the technical and economic feasibility of the Draft PCRs by finding the Draft PCRs meet the MEP standard. Additionally, the analysis completed and the evidence compiled to develop the Draft PCRs, described in the Technical Support Document, support the following findings in Draft Resolution R-3 2013-0032:
Finding 19: controlling urban runoff through LID (i.e., methods focused on reducing runoff volume) is important;
Finding 20: some circumstances can limit the feasibility of retaining and infiltrating stormwater;
Finding 21: application of post-construction requirements to redevelopment holds the potential to partially mitigate existing and new impacts or urbanization;
Finding 24: infiltration and subsurface flow are the dominant hydrologic processes across the intact watersheds of the Central Coast region; and
Finding 25: the Draft PCRs' emphasis on protecting and restoring key watershed processes is necessary to create and sustain linkages between hydrology, channel geomorphology, and biological health necessary for healthy watersheds.

The findings explain how the retention requirement is technically feasible in conditions typical of the localities in which they would be applied in the Central Coast (see discussion on p. 24-26 in Technical Support Document, "Feasibility of Achieving Retention" as well as Attachments D and G of Technical Support Document). Potential causes of technical feasibility are understood; they are identified in the Draft PCRs (see Section C.1); and they are consistent with the categories of infeasibility identified in other municipal stormwater permits throughout California. Water Board staff presents evidence from other localities with similar conditions (e.g., Hydrologic Soil Group Type D soils) that retaining the 95th percentile 24-hr runoff is feasible.

The Draft PCRs specifically address technical feasibility potentially caused by space constraints in redevelopment projects. Space limitations are known to cause technical obstacles to retaining large runoff volumes. To improve the feasibility of retaining runoff in redevelopment projects, which typically involve the replacement of existing impervious surfaces, the Draft PCRs provide a 50% reduction of the retention requirement for runoff generated by replaced impervious surfaces. For qualifying projects within designated Urban Sustainability Areas, runoff retention requirements are further reduced to simply matching pre-project retention from existing impervious surfaces. Furthermore, in those circumstances where a project can demonstrate that meeting the retention requirement is in fact technically infeasible, the Draft PCRs provide the option of dedicating 10 percent of the equivalent impervious surface area of the site to retention-based Stormwater Control Measures, or of pursuing off-site compliance.

The April 8, 2013 study included in Attachment G of the Technical Support Document was completed to provide methods for sizing facilities that comply with the Draft PCR retention requirements. One method relies on a conventional hydrograph routing approach that results in retention facilities known to be technically feasible because they are generally equivalent in size to facilities used in other localities with similar constraints on feasibility. The study states:
"Another way to evaluate feasibility of the Draft PCRs is to look at retention requirements in terms of unit storage volume, that is, cubic feet of storage required per square foot of impervious surface. Multiple agencies in California have developed design criteria for peak flow control based on local continuous simulation modeling, which includes a minimum unit storage volume. For example, the Contra Costa C.3 Guidebook provides minimum unit volume for peak flow control of the 2-year through 10-year storm. Contra Costa unit volumes range from 0.058 to 0.116. In comparison, by the simple sizing approach the Draft PCRs require a unit retention volume ranging from 0.146 to 0.364, for storms between 1-inch and 2.5-inches. This retention volume is 2 to 3 times greater than what Contra Costa requires to control the 10-year storm event. These values are based on the current Attachment D multiplier of 1.963. Dropping the

multiplier results in unit retention volumes ranging from 0.074 to 0.185, still over 50% greater than the Contra Costa 10-year peak flow control standard. By comparison, a hydrograph routing approach to SCM sizing with the PCR retention volume results in unit volumes ranging between 0.03 to 0.162, generally equivalent to the Contra Costa criteria." (Technical Support Document, Attachment G, p. 8)

This comparison of technical feasibility also relates to economic feasibility. Projects in Contra Costa County subject to requirements that result in retention volumes comparable to those resulting from application of the Draft PCRs are complying with those standards. A reasonable conclusion is that it is economically feasible for projects to meet the standards.

Central Coast Water Board staff also presents the following evidence of economic feasibility of implementing LID generally, and of relative costs of infiltration facilities specifically.

Costs of LID Generally

Post-construction stormwater requirements, including retention requirements, are being implemented in other regions of the State and nation. LID, as a mode of implementing post-construction requirements, has been shown to be cost-effective and compares favorably to conventional stormwater management. "As LID was developed by a local government, it is sensitive to addressing local government's unique environmental and regulatory needs in the most economical manner possible by reducing costs associated with stormwater infrastructure design, construction, maintenance and enforcement. LID also provides for local governments' need for economic vitality through reasonable and continued growth and redevelopment. LID allows for greater development potential with less environmental impacts through the use of smarter designs and advanced technologies to achieve a better balance between conservation, growth, ecosystem protection and public health/quality of life."[154]

Use of LID techniques at new development, redevelopment, and retrofit projects is an effective approach to minimizing the adverse effects of urbanization and development on receiving waters and their beneficial uses. The implementation of LID techniques across the US and Canada has demonstrated that the proper implementation of LID techniques results in more benefits than single purpose stormwater and flood control infrastructure, including increased water quality protection, enhanced property values, improved aquatic and terrestrial habitat, aesthetic amenities, and improved quality of life.[155] Further, properly implemented LID techniques can help mimic the pre-project runoff volume and time of concentration, thus minimizing the adverse effects of hydromodification on stream habitat and biological condition.[156] The Post-Construction Requirements facilitate the implementation of LID strategies to protect water quality, reduce runoff volume, and to garner additional benefits.

Traditional approaches to stormwater management involve conveying runoff off-site to receiving waters, to a combined sewer system, or to a regional facility that treats runoff from multiple sites. These designs typically include hard infrastructure, such as curbs, gutters, and piping. LID-based designs, in contrast, are designed to use natural drainage features or engineered swales and vegetated contours for runoff conveyance and treatment. In terms of costs, LID

[154] Coffman, Larry. *Low Impact Development: Smart Technology For Clean Water, Definitions, Issues, Roadblocks, and Next Steps.* American Society of Civil Engineers, 2004. Web. 16 August 2011. p. 1.

[155] USEPA. *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices*. *EPA 841-F-07-006*, December 2007. Web. 16 August 2011.

[156] *A Review of Low Impact Development Policies: Removing Institutional Barriers to Adoption.* Beltsville, Maryland: Low Impact Development Center; State Water Resources Control Board; The Water Board Academy, December 2007. Web. 16 August 2011.

techniques like conservation design can reduce the amount of materials needed for paving roads and driveways and for installing curbs and gutters. Conservation designs can be used to reduce the total amount of impervious surface, which results in reduced road and driveway lengths and reduced costs. Other LID techniques, such as grassed swales, can be used to infiltrate roadway runoff and eliminate or reduce the need for curbs and gutters, thereby reducing infrastructure costs. Also, by infiltrating or evaporating runoff, LID techniques can reduce the size and cost of flood-control structures.[157]

Some other potential economic benefits associated with LID strategies, include, but are not limited to, reduced need for flood control and increased property values.[158] LID can also provide the benefit of additional groundwater supplies.

Costs of Infiltration Facilities Specifically

Central Coast Water Board considered costs of constructing and maintaining infiltration facilities likely to be used in complying with the PCR retention requirements. In a recent study[159] the County of Orange, on behalf of the Orange County Stormwater Program, partnered with the Construction Industry Coalition on Water Quality to develop estimates of the costs of incorporating different combinations of LID BMPs into several of the most commonly encountered Orange County development scenarios. The study examined four different development project scenarios in Orange County ranging in size from a small urban mixed-use commercial retail and residential property with no parking provided (0.14 acre), up to a large "big-box" type commercial retail center on 12.4 acres. In three of four scenarios, the percentage of impervious area assumed was 90%, with LID BMPs sited predominately within landscaping and parking areas. The study considered five different LID BMPs for application within four categories of LID BMPs: infiltration basins and concrete pavers, harvest and use cisterns, green roofs, and biofiltration systems.

The study found that "infiltration and biofiltration systems were the least-cost practice to manage the Design Capture Volume for a given project, and the least costly BMPs to operate and maintain over a 20-year period. This finding is generally consistent with a small amount of published literature and reports on LID BMP costs in the US."

Specific costs for LID BMP installation and O&M "ranged from just over $50,000 for an infiltration paver system serving the small urban mixed-use residential and commercial scenario (0.14 acre, 2,800-gallon Design Capture Volume) up to $4.7 million for a cistern and green roof combination serving the 12.4-acre big-box commercial project. (Note: the 0.14-acre (6,098-sq. ft.) project would not trigger retention requirements under the Draft PCRs; water quality treatment requirements however would be triggered at 5,000 sq. ft. and based on the Orange County analysis, a project proponent may still find infiltration to be a cost-effective way to meet those requirements.)

The Orange County study found: "Assuming no technical infeasibility constraints, the least-cost LID BMPs are infiltration and biofiltration systems, regardless of volume managed or project type... Where space is available within a project site (the case studies assumed 3% or less of

[157] USEPA. *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices. EPA 841-F-07-006*, December 2007. Web. 16 August 2011.

[158] MacMullan, Ed. "Assessing Low Impact Developments Using a Benefit-Cost Approach." *2nd National Low Impact Development Conference, March 12-14, 2007*. ECONorthwest. Web. 16 August 2011.

[159] Mark Grey, Dave Sorem, Caitlin Alexander, and Richard Boon. "The Costs of LID Low-impact-development BMP installation and operation and maintenance costs in Orange County, CA." March-April 2013, Stormwater.

the total site area) to install an infiltration basin or biofiltration system, the cost of installing these two types of LID BMPs is under $4 per gallon and $2 per square foot of [Total Impervious Area]. The analysis shows that infiltration systems are less expensive to install than biofiltration systems."

Central Coast Water Board staff also considered costs of infiltration BMPs relative to other structural BMPs. Structural BMPs, or Stormwater Control Measures, are physical structures designed to remove pollutants from stormwater runoff, reduce downstream erosion, provide flood control and promote groundwater recharge. A 1999 USEPA report[160] examined typical base capital construction costs for BMPs. Base cost may include the cost of erosion and sediment control during construction. However, the report indicates that costs are challenging to estimate and cautions that "the costs of design, geotechnical testing, legal fees, land costs, and other unexpected or additional costs are not included in the estimates presented." Other factors contributing to the difficulty of developing accurate costs estimates are described: "the cost of constructing any BMP is variable and depends largely on site conditions and drainage area. For example, if a BMP is constructed in very rocky soils, the increased excavation costs may substantially increase the cost of construction. Also, land acquisition costs vary greatly from site to site. In addition, designs vary slightly among BMP types. A wet pond may be designed with or without various levels of landscaping, for example." With regard to infiltration BMPs in particular, the report states: "Costs for infiltration BMPs are highly variable from site to site, depending on soils and other geotechnical information." (p. 6-8). The EPA report presents data on typical unit costs (dollars per cubic foot of treated water volume) from various studies (p. 6-2).

Typical Cost in Dollars/Cubic Foot of runoff (Base year for costs: 1997)

Retention and Detention Basins	= 0.50-1.00
Constructed Wetland	= 0.60-1.25
Infiltration Trench	= 4.00 (typical costs for a 100-foot long trench)
Infiltration Basin	= 1.30 (typical costs for a 0.25-acre basin)
Sand Filter	= 3.00-6.00
Bioretention	= 5.30
Grass Swale	= 0.50 (based on cost/sq.ft &, 6 in. of storage in filter)
Filter Strip	= 0.00-1.30 (based on cost/sq.ft & 6 in. storage in strip)

Source: USEPA, 1999. Table 6-1. Typical Base Capital Construction Costs for BMPs

Central Coast Water Board staff found similar variability in more recent assessments of costs of stormwater BMPs, including a 2011 study from the Minnesota Pollution Control Agency[161] which presents the following data on 69 BMP projects.

Typical Cost in Dollars/Cubic Foot of runoff (Base year for costs: 2010)

Large Wet Detention Basin	= 2.00 (treating more than 100,000 cubic feet)
Small Detention Basin	= 145.00 (treating less than 10,000 cubic feet)
Constructed Wetland	= 1.00
Infiltration Trench	= 11.00
Infiltration Basin	= 21.00

[160] USEPA, 1999. "Preliminary Data Summary of Urban Storm Water Best Management Practices." EPA-8219R-99-012. August.

[161] Minnesota Pollution Control Agency, 2011. "Best Management Practices Construction Costs, Maintenance Costs, and Land Requirements." Prepared by Barr Engineering Company.

Bioretention Basin	= 15.00
Biofiltration Basin	= 58.00
Underground Infiltration	= 8.00
Pervious Pavement	= 16.00

Source: Minnesota Pollution Control Agency, 2011. Table 1: Summary of Construction Cost Data Collected

Based on available information, Central Coast Water Board staff finds facilities that function through infiltration are cost-effective and economically feasible, and therefore consistent with the MEP standard.

■ **CASQA – 3**

In addition to failing to bridge the analytical gap between the evidence and specific postconstruction requirements, the Central Coast Water Board is proposing regulatory requirements not supported by evidence in the record. CASQA understands that starting last year, prior to adoption of Resolution No. R3-2012-0025, numerous parties submitted comments explaining the unnecessary and unattainable nature of many of the components of the Post-Construction Requirements. Unfortunately, it appears that the Central Coast Water Board has not adequately addressed these concerns, including previous concerns raised by CASQA. As such, even if the Central Coast Water Board determines that the proposed Post-Construction Requirements are adequately supported by the findings, the findings are not supported by the evidence.

Specific examples of the requirements and their lack of supportive evidence are provided here.

1. The Requirement to Retain Runoff From Storm Events Up to the 95th Percentile 24-Hour Rainfall Event Is Not Based on Best Available Science for Hydromodification Control

The Draft Resolution designates ten WMZs based on receiving water type, geology, and percent slope. Projects that create and/or replace 15,000 square feet of impervious surface in WMZs 1 and 2, and portions of WMZs 4, 7, and 10 that overlie designated groundwater basins, are required to retain runoff from storm events up to the 95th percentile 24-hour rainfall event. Based on Table 5 of the Draft Technical Support Document (Attachment 2 of the Draft Resolution), this requirement would apply to 72 to 86 percent of the Central Coast's urban areas (depending on the extent of the groundwater basins). Accordingly, this requirement will have a significant impact on development projects in the region.

It is well established that stormwater control measures are most economical and efficient when they target small, frequent storm events that over time produce more total runoff than the larger, infrequent storms targeted for design of flood control facilities. Typically, design criteria for water quality control best management practices ("BMPs") are set to coincide with the "knee of the curve," i.e., the point of inflection where the magnitude of the event (and corresponding cost of facilities) increases more rapidly than the number of events captured. In other words, targeting design storms larger than this point will produce volume retention gains but at considerable incremental cost.8 Capturing additional incremental volume beyond the 85th percentile storm event has not been demonstrated to be more protective of water quality than Performance Requirement No. 2, which is similar to the water quality treatment standards adopted in the latest round of MS4 permits in the rest of the state. And, there is no evidence in the record to support the contention that it is more protective of water quality.

Staff Response to Comment CASQA – 3

The Draft PCR requirement to *retain* runoff from storm events up to the 95th percentile 24-hr rainfall event in some Watershed Management Zones is supported by the evidence. The Draft PCR requirement to *treat* runoff from storm events up to the 85th percentile 24-hr event is also

supported by evidence and is a criterion in wide use in municipal stormwater regulations throughout the State. CASQA's comment makes several points relating to the 85th percentile 24-hr rain fall standard that imply it is the more appropriate *retention* criterion to apply in the Draft PCRs. Other comments assert that the Draft PCR's retention requirement should be removed in its entirety. Central Coast Water Board staff addresses these points below to clarify how the 85th percentile 24-hr criterion relates to the Draft PCR's water quality treatment and retention requirements and to illustrate what it considers to be false comparisons made in the comment.

Point #1: "Typically, design criteria for water quality control BMPs are set to coincide with the "knee of the curve," i.e., the point of inflection where the magnitude of the event (and corresponding cost of facilities) increases more rapidly than the number of events captured... targeting design storms larger than this point will produce volume retention gains but at considerable incremental cost."

Central Coast Water Board Staff finds the concept of diminishing returns is valid, however the twenty-two year old "knee of the curve" analysis referenced in the comment no longer stands as a particularly useful analysis of cost effectiveness. The background for the comment is the October 5, 2000 State Water Board precedential decision concerning Standard Urban Storm Water Mitigation Plans (SUSMPs) (Order WQ 2000-0011). The SUSMP decision effectively established the 85th percentile 24-hr rain event as the MEP standard for *treatment* design, not for *retention* design. This distinction is critically important, as the Central Coast Draft PCRs address *treatment* design AND *retention* design. The 85th percentile 24-hr rain event for *treatment* has been used in stormwater permits throughout the State. It was the standard included in the 2003 Phase II municipal permit and it is included in the 2013 Phase II municipal permit as well as Phase I permits throughout California. The Central Coast Draft PCRs invoke the 85th percentile 24-hr rain event for *treatment* as well, in a manner consistent with the other permits around the State, AND include the 95th percentile 24-hr rain event for *retention* (along with reasonable alternatives).

In Order WQ 2000-0011, the numeric design standard created objective and measurable criteria for the amount of runoff that must be treated or infiltrated by BMPs. The purpose of the SUSMPs is to control runoff both during and after construction. SUSMP design standards require that developments shall be designed to mitigate storm water runoff (by treatment or infiltration) from one of the following:
"1. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area…, or
2. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment…, or
3. The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
4. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event." (Order WQ 2000-0011, pp. 7, 8).

The Order found that this design standard reflects MEP. The "knee of the curve" argument was likely an important consideration in the State Board's MEP determination, since it purportedly addresses relative costs of treatment BMPs.

An axiom in stormwater quality management is that small rain storms dominate the volume of runoff accumulated on an annual basis and consequently contribute the majority of the annual pollutant loading. Capturing a high percentage of annual runoff volume for treatment is thus the goal, but the exact percentage must be based on practical factors. The factor considered in the knee of the curve argument is the size of a detention basin. The "knee of the curve" itself comes from a study of six detention basins in the United States that were tested for runoff capture by comparing efficiencies (percent of annual runoff volume captured) versus detention basin storage volume. Runoff capture efficiencies of the detention basins were tested using an outflow discharge rate that emptied or drained the design storage volume in 24 hours based on field study findings (EPA, September 2004, Stormwater Best Management Practice Design Guide: Volume 1 General Considerations p. B-11).

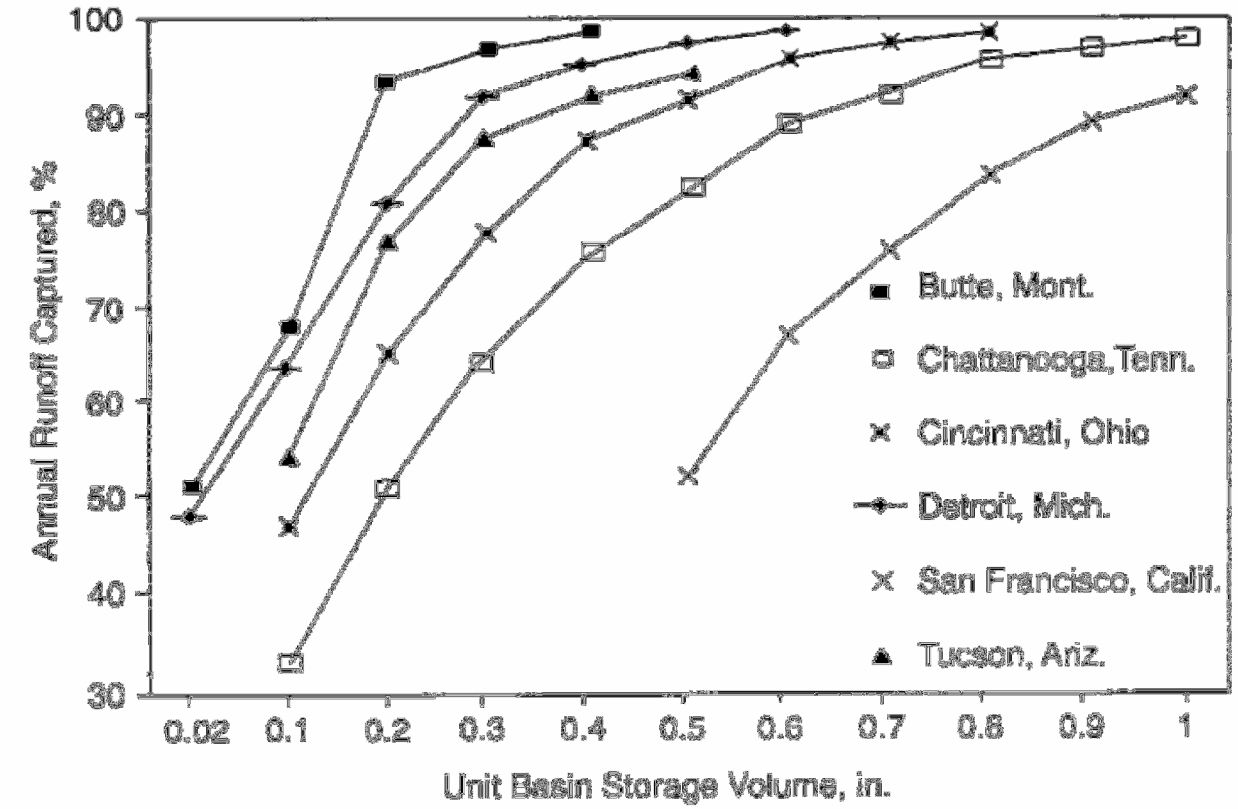

Figure 1. Runoff capture rates versus unit storage volume at six study sites
(WEF and ASCE 1998. "Urban Runoff Quality Management." WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87, WEF and ASCE, Virginia. p.173)

From this analysis it was assumed that the most cost-effective basin size is located at the knee of the curve, where the knee is the maximum optimal volume to be treated. Beyond the knee, the economic return on investments in facility size diminishes, since infrequent large storms do not significantly contribute to total annual runoff volume. Based on this study of six detention basins, the authors indicated the knee of the curve appeared to be around 80% to 90% of average annual volume of runoff. The low end of this range is the basis for the 80% criterion in the SUSMP. Additional analysis of rainfall patterns revealed that throughout California, the 85th percentile 24-hr rain event was roughly the return event most representative of this 80%

average annual runoff volume (i.e., basins that capture and retain for 24 hours events up to the size of the 85th percentile 24-hr rain event effectively capture 80% of the average annual runoff volume).

There are several aspects of this knee of the curve analysis that are important to point out:
1. The six simulations, performed using the characteristics of the most typically occurring urban developments found in each city, are now more than 22 years old and reflect technologies and land use development typologies that have since evolved. While some of the technologies (e.g., detention basins) are still in use, they are no longer considered an adequate method of runoff treatment and many more options are now available. For example, detention-based runoff treatment, largely accomplished through the settling of suspended contaminants over an extended period of time (e.g., 48 hours), is not effective in removing dissolved constituents.
2. Six detention basins is a very limited data set upon which to base standard criteria to be applied State-wide. Even assuming the data are representative of the many thousands of detention basin deployed around the country, the actual inflection point in the curves from these data is variable and is subject to interpretation. Selecting 80% capture volume represents the low end of the range, suggesting higher efficiencies are possible above that point.
3. The fact that the rainfall event associated with capturing 80% of annual runoff volume is variable from place to place suggests that the use of the 85th percentile 24-hr event may not be appropriate everywhere.

The State Board appeared to recognize some of the uncertainties associated with the 85th percentile criterion and provided some flexibility in how Regional Water Boards could apply it. Order 2000-0011 stipulated that in adopting SUSMPs in permits, the requirements should be substantially similar to the SUSMPs approved in the Order, however, "If, for example, the Regional Water Board determines that a different design standard than 85 percent of the runoff is appropriate, the permit findings should explain how the alternative design standard is generally equivalent to the standards approved in the Order, and why the alternative standard is appropriate to the area." (SWRCB, December 26, 2000. Memo from Craig M. Wilson, Chief Counsel of SWRCB, p.2)

Taking into account the three points above about the knee of the curve argument, Water Board staff finds the basis for the 85th percentile criterion in the knee of the curve argument is in need of review and update some 22 years since it was developed and 13 years since State Board Order 2000-0011 invoked it in establishing design criterion for water quality treatment facilities. At a minimum, an appropriate amount of caution is required in using it to substantiate a design standard. Such caution appears to have been exercised by stormwater permit writers, since most municipal stormwater permits in the State, also require retention based LID to improve the effectiveness of facilities designed per the 85th percentile criterion.

Regional Water Boards continue to invoke the standard, but in a manner that moves beyond the detention basin origins that supported the knee of the curve analysis. For example, infiltration of the 85th percentile 24-hr runoff volume through LID is required where technically feasible in the Bay Area Municipal Regional Permit. The distributed retention based facilities central to LID have little in common with the detention basin designs of the late 1980s that typified the six basins analyzed for the knee of the curve analysis. Thus the detention basin knee of the curve analysis no longer stands as a particularly useful analysis of cost effectiveness in the context of contemporary stormwater regulation.

The Draft PCRs follow the convention of other municipal stormwater permits and invoke the 85th percentile criterion for water quality treatment. Similar to the Bay Area permit, the Draft PCRs emphasize infiltration and retention based methods for meeting the criterion, though the Bay Area permit allows biotreatment (a flow-through treatment method) only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site. The Draft PCRs do not require the applicant to demonstrate infeasibility before moving to flow-through methods.

Point #2: Capturing additional incremental volume beyond the 85th percentile storm event has not been demonstrated to be more protective of water quality; there is no evidence in the record to support the contention that it is.

The final SUSMPs reflected two goals: to reduce the amounts of pollutants in runoff and to reduce the ability of runoff to act as a conveyance system to deliver more pollutants to receiving waters (p.16 Order 2000-11.) Since pre-development urban pollutant loading is zero, water quality protection is greater as urban runoff treatment approaches treatment of 100% of annual runoff volume. It is self-evident that treating more than 80% of annual runoff volume (the volume correlating to facilities designed to treat the 85th percentile 24-hr rain event) results in greater reductions in pollutant loading. The 80% threshold was based on cost effectiveness in a treatment method (extended detention) that is well recognized as inferior to contemporary alternatives (biotreatment, media filters, various LID BMPs).

Furthermore, the Order made no determination that SUSMPs should be applied in pursuit of other water quality protections besides runoff treatment (e.g., the 85th percentile criterion was not identified as MEP for addressing hydromodification impacts or groundwater depletion resulting from converting undeveloped pervious surfaces to developed impervious surfaces). Importantly, the 85th Percentile criterion was developed to address runoff *treatment,* not runoff *retention*. Because the criterion is predicated on a treat and release concept for managing runoff, Water Board staff finds the 85th percentile criterion has no inherent validity as a criterion for runoff retention. Because urban water quality improvements besides pollutant reduction are attainable through stormwater management actions besides runoff treatment, various criteria have been used to achieve these improvements.

The result is that contemporary post-construction stormwater management in California, codified by numerous NPDES municipal stormwater permits, addresses runoff treatment (pollutant removal) and flow control (i.e. hydromodification control for stream stability) through separate numeric criteria. In permits adopted throughout the State, numeric requirements for runoff treatment are triggered at smaller project scales (5,000 – 10,000 feet) and invoke the State Water Board Order's 2000-0011 criterion: treat runoff produced by an 85th percentile 24-hr rain event. While requirements for flow control are triggered for larger projects (generally an acre or more), and typically include runoff peak controls as well as maintenance of flow rates and durations below thresholds that cause stream erosion.

Recognizing the inherent limitations of these two basic types of numeric criteria in addressing the full range of urban runoff's potential impacts to beneficial uses, State Water Boards have included in more recent stormwater permits a third requirement: qualitative requirements for LID. LID is generally understood to offer more comprehensive protection to the range of beneficial uses impacted by urban runoff.

Irrespective of the reasons why this trilateral approach to post-construction stormwater management has arisen in California's NPDES permits, it has resulted in implementation

challenges for Water Boards, municipal permittees, and project applicants alike. Various stakeholders have contributed to several unique and innovative approaches to meeting these challenges, but no single preferred strategy has yet to emerge and it is reasonable to conclude that it could be many years before the State sees a unified regulatory approach to post-construction stormwater management. However, the Central Coast Water Board has developed post-construction requirements that offer clear advantages over the bifurcated strategies being pursued in other stormwater permits.

A key element of the Central Coast Draft PCRs is requirements for runoff volume retention for projects with 15,000 square feet or more of new/replaced impervious surface. Central Coast Water Board staff finds several clear advantages to the volume based approach as invoked by the Draft PCRs:

1. The approach moves beyond the inherent limitations in the trilateral strategy (treat runoff/prevent stream erosion/LID) and yields protections for all receiving waters and other beneficial uses.
2. It provides a critically needed quantitative objective for implementing LID and corresponds with the key objective of LID to reduce runoff volume.
3. It effectively bridges the objectives of runoff treatment and stream erosion prevention with the simple and straightforward strategy of runoff volume reduction.
4. It reduces analytical costs for project design compared to costs associated with meeting flow duration management requirements for hydromodification control.
5. It targets the primary cause of urban runoff impacts: increased runoff volume.
6. It uses performance objectives that are clear and straightforward (e.g., "retain X volume of runoff," as opposed to the more complicated "maintain flow durations at X percent of the discharge with Y return interval"), allowing for more consistent implementation and greater ease in determining compliance.

Central Coast Water Board staff finds in some areas of the region (Watershed Management Zones 5, 6, 8, and 9), the 85th percentile 24-hr storm event is an appropriate volume retention objective for addressing a range of water quality objectives such as runoff treatment, groundwater recharge, and stream erosion prevention. However, other areas of the region including alluvial areas typically overlying groundwater basins are more infiltrative. Applying the 85th percentile storm event uniformly as an objective for runoff retention would ignore this variability in hydrologic conditions in the Central Coast, potentially cause undue burden to projects in areas not suitable for retention, and result in incomplete mitigation of projects in areas where higher amounts of retention are consistent with predevelopment conditions.

While the 85th percentile 24-hr rain event objective is roughly equivalent to capturing 80% of annual runoff volume, Water Board staff found evidence and presented it in the Technical Support Document that areas in the Central Coast Region (Watershed Management Zones 1, 2, and portions of 4, 7, and 10 overlying groundwater basins) naturally retained (infiltrated, evapotranspired, or routed to subsurface flow) more than this percentage of runoff volume in predevelopment conditions. So, an 85th percentile retention objective would not adequately manage (reduce) runoff volume from impervious surfaces in these areas. For these areas, a 95th percentile objective is appropriate, and where it cannot be achieved because of technical infeasibility, the Draft PCRs present alternative compliance options.

■ CASQA – 4

CASQA understands that the purpose of Performance Requirement No. 3 is to require volume retention of the 95th percentile event as a surrogate standard for hydromodification control, as

this standard is intended to "protect watershed processes so that beneficial uses of receiving waters are maintained and, where applicable, restored." To CASQA's knowledge, which on these matters is extensive, an event-based volume retention standard is not a well-developed or proven approach for hydromodification control in any recent municipal hydromodification planning experience or in the scientific literature. It is our understanding that this highly simplistic approach was derived based on assumed watershed processes from a set of narrative descriptions of WMZs, which were in turn based on slope and geology. CASQA cannot support the event-based volume retention requirement as a universal surrogate for hydromodification control, and is concerned that the 95th percentile standard could be applied at the statewide level.

Staff Response to Comment CASQA – 4

The PCRs' retention requirements are not the exclusive way the PCRs address hydromodification control. For projects with more than ½ acre of new and/or replaced impervious surface, peak management requirements combine with the runoff retention requirements to provide more comprehensive hydromodification control. However, the runoff retention requirements were developed to address a broad suite of urban stormwater impacts, including the impacts associated with reduced infiltration of stormwater to support aquatic life beneficial uses dependent on baseflow, as well as pollutants generated by larger development sites. By comparison, requirements for hydromodification control in recent municipal permits are narrowly focused on stream channel stability. Central Coast Water Board staff also challenges the assertion that existing flow duration management approaches have been shown to be effective in places where they are being applied. The effectiveness of the flow duration control approach will take several years to evaluate. Central Coast Water Board staff asserts that the pre-occupation with flow duration control and stream stability occurs at the cost of averting attention from other key watershed processes (e.g., groundwater recharge, subsurface flow) that are clearly affected by urban runoff.

Where channel stability is the focus, flow duration control requirements are commonly invoked. The Draft PCRs explicitly target runoff volume, not flow-duration, in an effort to achieve protection for a broader suite of watershed processes and the beneficial uses those processes support. The volume-based approach is a more direct and more effective strategy to mitigate water quality impacts from urban stormwater and has the backing of the National Academy of Sciences and the USEPA, as explained in the Technical Support Document accompanying the Draft Post-Construction Requirements.

To address stream stability, the Draft PCRs combine the runoff retention requirements with a peak flow requirement (Performance Requirement No. 4). Central Coast Water Board staff commissioned an independent analysis of the effect of the Draft PCRs combined approach of runoff retention and peak management on flow duration to determine if comparable levels of protection could be achieved with the combined approach. The Case Study (See Technical Support Document, Attachment D) concludes that for a typical commercial redevelopment project, "on-site retention facilities are not necessarily superior to detention facilities in controlling high flow durations on tight (D) soils; however, on C soils the additional infiltration greatly assists in lower durations of flows smaller than the 2-yr peak annual flow." The Case Study presents the following table to summarize the reductions in high flow durations achieved by the combined approach.

Table 9. Average Percentage Reduction in High Flow Durations from 50% of the 2-yr to the 10-yr Peak Annual

Development Scenario	C-Soil	D-Soil
Residential with Retention & Detention	92%	91%

Commercial with Detention Only	9%	96%
Commercial with Retention & Detention	71%	96%

A particular strength of the combined approach is its simplicity. This simplicity significantly reduces the cost burden on Regulated Projects by eliminating the necessity of conducting the continuous simulation modeling required to demonstrate compliance with flow-duration management standards. The Technical Support Document provides a comprehensive discussion of the volume-based approach to managing urban runoff and supports the Central Coast Post-Construction Requirements as a means to achieve this approach, resulting in broad protections of beneficial uses impacted by urban runoff.

The comment reflects a misunderstanding about the technical foundation of the runoff requirements in the Draft PCRs, namely that the requirements are based on loose descriptions of Watershed Management Zones. To the contrary, Central Coast watershed processes were identified, and Watershed Management Zones were delineated by scientifically sound and fully document method described in the Technical Support Document, including Attachment E of that volume: Methods and Findings of the Joint Effort for Hydromodification Control in the Central Coast Region of California. Physical evidence of extant watershed processes is discussed throughout Attachment E, and a complete discussion of the derivation of Watershed Management Zones based on physical conditions is provided (See discussion of linkage analysis in Staff Response to Comment CASQA- 1).

Water Board staff based final selection of runoff retention criteria on a robust evaluation of a wide range of criteria used to manage urban runoff nationwide. The document, Development and Implementation of Hydromodification Control Methodology: Support for Selection of Criteria (See Attachment H to Technical Support Document), was presented to the Joint Effort Review Team (JERT), discussed by the JERT, and summarized in the Technical Support Document included in the proposed Resolution made available on May 14, 2012 for 53 days of public comment. The document was developed to provide a linkage between broad groups of stormwater management objectives (strategies), specific examples of stormwater management criteria for each strategy from California and around the nation, and how implementation of each criterion is anticipated to preserve or replace critical watershed processes identified by the Joint Effort methodology.

■ CASQA – 5

CASQA Recommendations

Due to current deficiencies associated with this approach, CASQA recommends the Central Coast Water Board continue working with the Central Coast municipalities to develop sizing and design criteria, consistent with appropriate hydrologic analysis methods that optimize on-site retention to reflect actual rainfall/runoff relationships for the project site.

Staff Response to Comment CASQA – 5

A hydrograph analysis method that optimizes on-site retention was worked out by Central Coast Water Board staff and the JERT and is now included as Attachment D of the Draft PCRs. Staff does not agree with the comment's characterization of deficiencies associated with the Draft PCRs. Staff does intend to continue working closely with permittees and other stakeholders throughout implementation of the Draft PCRs to address issues of technical feasibility. See Staff Response to Comment CASQA – 6 for discussion of continuous simulation modeling of rainfall/runoff relationships.

■ CASQA – 6

While CASQA has concerns with the approach overall, at the very least CASQA recommends the following revision to the Draft Resolution under Performance Requirement No. 3, Runoff Retention (p. 8):
vi) Hydrologic Analysis and Structural Stormwater Control Measure Sizing – To determine Stormwater Control Measure sizing and design, Permittees shall require Regulated Project applicants to use one of the following: 1) the hydrologic analysis and sizing methods as outlined in Attachment D, or 2) a locally/ regionally calibrated continuous simulation model that results in an equally protective method for matching pre-development hydrology, proposed by the Permittee and ~~equivalent optimization of on-site runoff volume retention; or 3) hydrologic analysis and sizing methods, equally effective in optimizing on-site retention of the runoff generated by the rainfall event specified in Section B.4.c, that have been~~ approved by the Central Coast Water Board Executive Officer.

Staff Response to Comment CASQA – 6
Central Coast Water Board staff proposes no change to the PCR language sited in the comment.

The change proposed in the comment results in asking only what is possible on an individual site and as such, misses the larger context in which that site is being developed. It is in that larger context that the cumulative effect of many actions on many individual sites manifests. Abandoning or ignoring the information about hydrologic response of the larger landscape context and instead relying exclusively on a modeled estimate of conditions on an individual site to dictate management actions, will perpetuate the cumulative effects of urbanization on water quality. This is not only Central Coast Water Board staff's position, but that of the National Research Council of the National Academy of Sciences, the USEPA, and the preponderance of academic literature as summarized in the Joint Effort Literature Review.

The Draft PCRs require the use of the 85th or 95th percentile 24-hr storms as a proxy for pre-development hydrology. They also permit the use of continuous simulation modeling to size structural Stormwater Control Measures to retain runoff from these rain events. The proposed revision however, would broaden the use of continuous simulation modeling to estimate pre-development hydrology and then allow the estimate to serve as design criteria of structural Stormwater Control Measures.

Continuous simulation modeling is predicated on reference conditions that define the pre-development hydrograph and which are unlikely to be available in most project settings. As stated in the EISA guidance documents:
"In practice, determining the pre-development hydrology of a given site can be difficult if there is no suitable reference site. As a result, reference conditions for typical land cover types in the locality often are used to approximate what fraction of the precipitation ran off, soaked into the ground or was evaporated from the landscape. The use of reference conditions can be problematic if suitable data are not available or unique site conditions exist that do not fit within a typical land use cover type for the area, e.g., meadow or forest. In cases where suitable data from comparable conditions cannot be found or is otherwise inadequate to be used in conducting an [continuous simulation] analysis for the specific area being considered for development or redevelopment, the project sponsor should use the [proxy]. (EISA Technical Guidance, p. 16.).

The use of a proxy is appropriate because the ability to determine actual pre-development hydrology is limited. Even the best models of individual site predevelopment condition are approximations of actual predevelopment condition. For example, actual infiltration rates for

predevelopment and existing conditions are often poorly represented by the standard data used as inputs into continuous simulation models (typically, saturated hydraulic conductivity, a useful if incomplete measure of infiltration potential, is taken from NRCS Soil Surveys which lack site-specific verification).

The proxy itself (i.e., prevent discharge from events up to the 85th or 95th percentile 24-hr event) is clearly linked to the results of the scientific approach of the Joint Effort. Where the primary hydrologic response of a broad section of landscape, as delineated by a Watershed Management Zone, is known to be dominated by infiltration in its undisturbed condition, it is appropriate to make infiltration (e.g., of the 85th or 95th percentile 24-hr event) a primary management objective for development throughout the entire Watershed Management Zone. The fact that every square inch of every site within that Watershed Management Zone does not infiltrate at the same rate does not change the overall characteristics of the Watershed Management Zone. As urbanization of the Watershed Management Zone proceeds, surface runoff replaces infiltration and subsurface flow as the dominant hydrologic response. Preserving the management goal of infiltration throughout the Watershed Management Zone is appropriate because, even with implementation of requirements to maintain infiltration, the Watershed Management Zone will continue to lose infiltrative capacity as urbanization proceeds. This occurs because the Draft PCRs are not comprehensive in nature: they target only partial mitigation of only new and replaced impervious surface, and only for projects meeting certain size thresholds.

■ CASQA – 7

2. The Hydromodification Management Standard in Performance Requirement No. 4 Requiring Matching Post-Project to Pre-Project Peak Flows for the 2- Through 10-Year Storm Events, in Combination With the 95th Percentile Runoff Retention Standard, Is Not Supported by the Extensive Study That has Been Completed on Hydromodification Control Elsewhere in the State

Numerous studies have documented that matching peak flows alone for a range of storms is not protective of streams because flow durations are increased and can cause adverse erosive impacts. This fact is recognized by the Central Coast Water Board in Attachment 2 of the Draft Resolution, which states that:

Water Board staff recognizes that peak management alone is not sufficient to protect downstream receiving waters due to the extended flow durations that can still cause adverse impacts. However, Water Board staff anticipates that the Peak Management criterion, when used in combination with the Runoff Retention requirement, will achieve a broad spectrum of watershed process protection while also protecting stream channels from hydromodification impacts. Water Board staff's judgment is based on the fact that the retention requirement is expected to avoid gross changes in the distribution of runoff between surface and subsurface flow paths for smaller events, and that peak management is expected to provide critical stream protection from the larger events, starting conservatively at the 2-year storm event.

The combination standard in Performance Requirement No. 4 has not been studied as to its effectiveness in protecting streams, nor is it consistent with current approaches throughout the state that have been studied. Rather, Central Coast Water Board proposes to impose the requirement based on its "anticipation" and "judgment." However, there is no evidence in the record to support the use of Performance Requirement No. 4 in the manner as proposed here.

As stated in Attachment 2 of the Draft Resolution:

> For the purposes of these Post-Construction Requirements, retaining runoff from all rain storms up to and including the 85th or 95th percentile storm is analogous to maintaining or restoring the pre-development hydrology with respect to the volume, flow rate, duration and temperature of the runoff for most sites. Retention of runoff up to these percentile storms is indicated because this storm size represents the volume that appears to best represent the volume that is fully infiltrated in a natural condition and thus should be managed onsite to maintain this predevelopment hydrology for duration, rate and volume of stormwater flows. Maintaining predevelopment runoff duration, rate, and volume provides broad support to watershed processes, including, reduced overland flow, infiltration, interflow, and groundwater recharge, and achieves reductions in urban pollutant loading of receiving waters that are non-existent under natural conditions.

Given the underlying presumption that retaining runoff from all rain storms up to and including the 85th or 95th percentile storm is analogous to maintaining or restoring the pre-development hydrology with respect to the volume, flow rate, duration and temperature of the runoff for most sites, it should not be necessary to also control peak rates, which according to the statement cited above, did not occur in the pre-developed condition and would not occur in the post-developed condition with implementation of Performance Requirement No. 3. Discrete event criteria such as these are appropriate to mitigate for potential impacts to local storm drainage systems (i.e., storm drain conveyance capacity and flood control), but should not be used for hydromodification control.

In addition, technical justification has not been provided for the application of Performance Requirement No. 4 to projects which create and/or replace greater than or equal to 22,500 square feet of impervious surface, as opposed to projects which create and/or replace greater than or equal to 15,000 square feet of impervious surface as specified in Performance Requirement No. 3. Presumably, since Performance Requirement No. 3 is intended to maintain the "dominant watershed process throughout the Watershed Management Zone," then Performance Requirement No. 3 should be able to achieve this goal for all project sizes.

Staff Response to Comment CASQA – 7

The Post-Construction Requirement's peak management requirement cited in the comment is triggered at ½ acre, and when combined with the runoff retention requirement, compares favorably to the flow duration control approach used in other permits in terms of performance, while allowing for the use of readily available, standard, event-based calculations for determining peak runoff for the 2- to 10-yr events.

Central Coast Water Board staff included evidence in the record supporting the peak management requirement (Performance Requirement No. 4), including an independent analysis of the effect of the Post-Construction Requirements' combined approach of runoff retention (Performance Requirement No. 3) and Performance Requirement No. 4 on flow duration to determine if comparable levels of protection could be achieved with the combined approach. The Case Study (See Technical Support Document, Attachment D) concludes that for a typical commercial redevelopment project, "on-site retention facilities are not necessarily superior to detention facilities in controlling high flow durations on tight (D) soils; however, on C soils the additional infiltration greatly assists in lower durations of flows smaller than the 2-yr peak annual flow." The Case Study presents the following table to summarize the reductions in high flow durations achieved by the combined approach.

Table 9: Average Percentage Reduction in High Flow Durations from 50% of the 2-yr to the 10-yr Peak Annual Flow

Development Scenario	C-Soil	D-Soil
Residential with Retention & Detention	92%	91%
Commercial with Detention Only	9%	96%
Commercial with Retention & Detention	71%	96%

The Draft PCRs provide considerable alternative compliance options which may result in on-site management approaches that do not necessarily prevent the discharge of runoff from all events up to the 95th percentile 24-hr rain. For this reason alone, the peak management requirement provides a safeguard against project effects where retention may not be achieved at levels protective of downstream receiving waters.

As to the comment that it is not consistent with approaches used throughout the State, the recently approved Phase II permit requires post-project runoff peak matching requirements State-wide. Under the new Phase II permit post-project runoff shall not exceed estimated pre-project flow rate for the 2-year, 24-hour storm in certain geomorphic provinces and shall not exceed the 10-year, 24-hour storm in the remaining geomorphic provinces.

■ CASQA – 8

Next, as stated in Attachment 2, Performance Requirement No. 5 allows projects to be subject to "Special Circumstances" based on certain site and/or receiving water conditions that were not captured at the regional scale of analysis. The Special Circumstances designations are meant to effectively exempt projects from hydromodification control requirements (i.e., Retention and/or Peak Management Performance Requirements) where those Performance Requirements would be ineffective or inappropriate to maintaining or restoring beneficial uses of receiving waters. But the way the requirements are structured in the Draft Resolution, a project that receives Special Circumstances designation but creates and/or replaces greater than or equal to 22,500 square feet of impervious surface would still have to implement hydromodification controls in compliance with Performance Requirement No. 3.

If a project's receiving water is not susceptible to hydromodification impacts, then maintaining watershed processes via hydromodification controls pursuant to Performance Requirement No. 3 would be ineffective for maintaining beneficial uses of those receiving waters. Furthermore, implementation of hydromodification controls pursuant to Performance Requirement No. 3 will not restore beneficial uses in existing hardened channels. The watershed processes (i.e., watershed hydrology) are only one consideration in channel restoration projects. It is inappropriate for the resolution to presuppose the outcome of a channel restoration plan.

Projects subject to these Special Circumstances should only be required to implement water quality treatment per Performance Requirement No. 2.

CASQA Recommendations

CASQA recommends that the Draft Resolution be revised to remove Performance Requirement No. 4 in its entirety. In addition, CASQA recommends removal of the hydromodification control requirements (i.e., Performance Requirement No. 3) from the Performance Requirements for Highly Altered Channel and/or Intermediate Flow Control Facility Special Circumstances.

Staff Response to Comment CASQA – 8

Performance Requirement No. 3 for Runoff Retention is not required for all Special Circumstances projects that create and/or replace greater than or equal to 22,500 square feet of

impervious surface. It is reserved for such projects occurring in Watershed Management Zones where infiltration is a dominant watershed process. While protecting a hardened channel from peak flows is likely unnecessary and the Peak Management Performance Requirement can be reasonably suspended for projects that discharge to hardened channels, retention of runoff volume on project sites in Watershed Management Zones where infiltration is a dominant watershed process supports other beneficial uses and is justified. For example, retention results in greater pollutant removal than flow-through treatment measures. It also prevents thermal impacts of runoff from impervious surfaces entering receiving waters.

The comment states that retention will not restore beneficial uses in existing hardened channels and watershed processes (i.e., watershed hydrology) are only one consideration in channel restoration projects. Water Board staff concedes that restoration of beneficial uses in hardened channels is likely to require work in the channel (e.g., removal of concrete, daylighting culverted streams, introducing sinuosity and coarse sediment, establishing riparian vegetation) in addition to restoration of a flow regime supporting those beneficial uses. However, based on an abundance of evidence from post-project evaluations of channel restoration projects, channel restoration projects that seek to restore hydrologic function should in fact make watershed processes a primary consideration, or the restoration goals of the project are unlikely to be achieved.

■ **California Coastkeeper Alliance/NRDC – 1**

On behalf of California Coastkeeper Alliance, a network of local Waterkeeper groups spanning the coast, including Santa Barbara Channelkeeper, San Luis Obispo Coastkeeper, and Monterey Coastkeeper, and the Natural Resources Defense Council we are writing in support of the Runoff Retention requirements contained in Draft Resolution No. R3-2013-0032, approving Post Construction Stormwater Management Requirements for Development Projects in the Central Coast Region ("Post-Construction Requirements") to comply with the Statewide NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Order NO. 2013-0001-DWQ ("Phase II MS4 Permit"). Our organizations have a vested interest in the development, adoption, implementation and enforcement of stormwater permits statewide, and have been part of the Phase II MS4 Permit reissuance process since its inception. We appreciate the opportunity to comment on the Central Coast Regional Water Quality Control Board's ("Regional Board's") Post-Construction Requirements.

Stormwater runoff is a potential source of impairment for at least 72 out of the 192 impaired water segments in the Central Coast region. In particular, the Central Coast's marine ecosystems are highly vulnerable to land-based activities. For example, more than 50 rivers, creeks and estuaries drain into the Monterey Sanctuary and surrounding marine protected areas. Low impact development (LID) or green infrastructure practices that capture stormwater runoff are one of the most effective means for maintaining the natural hydrology of a site, for preventing stormwater pollutants from entering our waterways, and for promoting a sustainable and low-energy water supply augmentation strategy. Therefore, it is crucial that the Central Coast's MS4 permits require LID or green infrastructure practices that address runoff at its source, reducing stormwater volume and allowing it to infiltrate into the ground to recharge local groundwater basins where feasible. In doing so, Central Coast municipalities can achieve the dual benefits of reducing polluted flows to waterways and increasing local water supplies.

We urge the Regional Board, in considering draft order R3-2013-0032, to maintain the Runoff Retention requirements of Section B.3 of the Post-Construction Requirements, and to adopt the order without further delay.

I. Retention of the 95th percentile storm event protects water quality and recharges groundwater supplies, and is feasible for the vast majority of sites covered.

Over the past eight years the Regional Board has collaborated with regional stakeholders to identify 10 Watershed Management Zones ("WMZs") that reflect the variations in watershed processes in the region. In certain WMZs, the Post-Construction Requirements would require municipalities to meet Runoff Retention requirements at new development and redevelopment projects, where feasible, to retain the 95th percentile storm event. This Runoff Retention volume must be infiltrated, evaporated/transpired, and/or harvested for later use. Retention objectives are now recognized as a superior way to address both the treatment of polluted runoff, as required by the Clean Water Act, and the recharge of groundwater basins critical to California's water supply portfolio. Requiring that this volume of runoff be retained will advance these critical goals.

Under Section 438 of the Energy Independence Security Act of 2007 ("EISA"), all new and redeveloped United States federal facilities over 5,000 square feet are directed to meet stormwater runoff requirements that, under guidance developed by the U.S. EPA, include as the default compliance option retention of the 95th percentile storm event onsite. In setting this default 95th percentile standard, EPA relied on a detailed technical analysis, including assessment of multiple case studies, to demonstrate that retention of the 95th percentile storm event is technically feasible for a range of site conditions and building designs throughout the country.

Similarly, through analyzing geology, landforms, hydrologic features, and vegetation in the region, the Regional Board has determined that retention of the 95th percentile storm is technically feasible in certain WMZs, and as a result determined to require this standard—in part "because 'it employs natural treatment and flow attenuation methods that are presumed to have existed on the site before construction of infrastructure (e.g., building, roads, parking lots, driveways,).'" Notably, this strategy correlates the Runoff Retention standard with local hydrology; retention of the 95th percentile storm is not required in all areas covered by the Post-Construction Requirements, only in areas where infiltration is highly dominant and will facilitate retention. Since the retention of the 95th percentile storm has been demonstrated to be achievable in these areas, the Regional Board's decision to include them in the Post-Construction Requirements properly meets the requirements of the Clean Water Act's "maximum extent practicable" standard under 33 U.S.C. 1342(p)(3)(B)(iii), rather than exceeding it.

The Runoff Retention requirements are designed to address the full suite of watershed processes affected by urban stormwater, including surface runoff, groundwater recharge, and the chemical and biological role of soil and vegetation in filtering runoff. Moreover, the requirement to retain the 95th percentile standard will help promote continued positive watershed processes—thereby advancing water quality and supply goals for the region.

II. Alternative compliance mechanisms are provided where retention of the 95th percentile storm is infeasible.

The Regional Board should reject claims by permittees that the Runoff Retention requirements are improper because it may not be feasible to retain the 95th percentile storm at all sites in the specified WMZs, or suggestions that a uniform, 85th percentile retention standard should be adopted instead. First, as discussed above, the 95th percentile retention standard is not required everywhere, only in those WMZs where analysis has demonstrated that retention of this volume is technically feasible. In areas outside these WMZs, an 85th percentile retention standard will apply. Second, the Runoff Retention standards limit the portion of a project site that must be dedicated to retention-based control measures, beyond which further compliance is not mandated. Third, for the small percentage of sites that are required to meet the 95th percentile standard but where it is technically infeasible to do so, the Post-Construction Requirements allow for off-site mitigation options via alternative compliance. As the Staff Report to Order R3-2012-0025 stated, "no site [will be] required to infiltrate beyond its natural capacity to infiltrate."

III. The Regional Board has already committed substantial financial and staff resources to implement its Post-Construction Requirements.

The Regional Board has already committed substantial funds and staff resources to implement LID throughout the Region, and should not allow its efforts to go to waste. The Regional Board created an LID Fund in 2008 and has spent more than $2 million providing technical support to advance the implementation of Post-Construction Requirements throughout the region. In an effort to financially assist municipalities, the Regional Board further secured funds from the State Board's Cleanup and Abatement Account to support development of hydromodification control criteria and related Post-Construction Requirements, including creation of a methodology that led to the Runoff Retention standards in the proposed order.

Further, Regional Board staff spent substantial time over the last eight years to ensure the standards ultimately proposed are scientifically driven and reflect stakeholder concerns. This program is a direct product of staff's continued engagement with stakeholders through both structured and informal opportunities for involvement. These efforts included:

- convening a technical review committee to review all deliverables from the technical consultants;
- conducting multiple stakeholder workshops throughout the process;
- posting project materials on a dedicated Joint Effort webpage;
- including Joint Effort items on multiple Regional Board meeting agendas;
- providing stakeholders with a mid-term status report;
- speaking at municipal stormwater manager groups throughout the region; and
- convening meetings with key environmental and building industry stakeholders.

Staff also remained actively engaged in stakeholder workshops for the Post-Construction Requirements being considered for the update to the State Board's recently renewed Phase II MS4 Permit. In all, the resulting Runoff Retention standards in the Requirements represent a substantial investment by the Regional Board, one that it should affirm here.

IV. The Regional Board's Runoff Retention requirements will inform the State Board's adoption of similar requirements in its statewide Phase II MS4 Permit.

The Regional Board's Runoff Retention requirements are critical to a State Board effort to develop similar requirements statewide. Staff, in fact, coordinated with the State Board to develop hydromodification control methodology, criteria, policy, and other permit requirements contained in this order. The Regional Board's methodology to determine hydromodification control criteria overall will assist the State and Regional Boards in directing permittees to successfully develop scientifically sound and understandable criteria elsewhere. Like the Regional Board, the State Board believes that "[t]hrough the development of hydromodification measures based on watershed management zones, key watershed processes will be protected, and where degraded, restored. As a result of restored and maintained watersheds, key relationships between hydrology, channel geomorphology and biological health will be created and maintained and water quality/beneficial uses protected." The State Board expects to delineate WMZs during the Phase II permit's term, and "watershed management zones will be used to identify applicable areas and to determine appropriate criteria for runoff retention and hydromodification control." This order, including its use of Runoff Retention requirements, will provide the foundation for WMZ evaluations statewide, and help other regional boards assess the impact of hydromodification management controls to achieve real, quantifiable, and cost-effective environmental benefits like improved surface water quality and groundwater recharge.

California needs stormwater permits that achieve the dual benefits of sustainable water resources and fewer contaminated waterways. Stormwater capture mimics nature by using LID or green infrastructure practices such as infiltrating stormwater into groundwater basins. The result is less water pollution from stormwater runoff, reduced flooding, replenished water supplies, and more natural-looking, aesthetically pleasing cityscapes. For the aforementioned reasons, we urge the Regional Board to maintain the Runoff Retention requirements in this Order, and look forward to working with the Board to protect water quality and address resource issues throughout the region.

Staff Response to Comment California Coastkeeper Alliance/NRDC – 1
Central Coast Water Board staff notes California Coastkeeper Alliance and NRDC's support of the Draft PCRs.

■ **Santa Barbara Channel Keeper – 1**
For the past 13 years, Santa Barbara Channelkeeper has worked to protect and restore the Santa Barbara Channel and its watersheds, including from stormwater runoff, the number one source of water pollution in our region. We have been intimately involved in the formulation and implementation of southern Santa Barbara County municipalities' Storm Water Management Programs (SWMPs) for the past several years, and we continue to be concerned about the severe impacts of stormwater runoff on water quality, beneficial uses and the biological and physical integrity of the watersheds in our region. We strongly support the proposed PCRs and urge you to adopt them at your hearing on July 12, 2013. Our detailed comments are provided below. We also hereby incorporate by reference the comments submitted by the California Coastkeeper Alliance. The proposed PCRs constitute the minimum requirements necessary to protect water quality from the impacts of stormwater runoff from development, while providing expansive accommodation to allow for infill and redevelopment as well as significant flexibility for instances of demonstrated technical infeasiblity. The PCRs fulfill and provide for the requirements to develop, adopt and implement the Low Impact Development (LID) and flow control commitments mandated in Central Coast municipalities' SWMPs. These requirements have been under development for more than four years, with extensive input and involvement by the region's municipalities and other stakeholders and informed by an expert team of

scientists who characterized the region's watersheds and helped create a methodology for developing PCRs based on that characterization. They are science-based and provide a sound alternative to the "one size fits all" approach to account for varying local conditions, as demanded by the permittees. Their volumebased approach to stormwater management is strongly endorsed by the nation's leading science and policy experts and is also being embraced by engineering practitioners. Central Coast Regional Water Quality Control Board (RWQCB) staff have undertaken exhaustive efforts to accommodate the concerns expressed by permittees and have weakened the requirements in numerous instances to address those concerns.

For one, the revised PCRs have eliminated the 1.963 multiplier to determine the retention volume that stormwater control measures must be sized to accommodate for event-based approaches, and allowed for facility sizing by either the Simple Method or the Routing Method when project applicants opt to use event-based approaches. The revised PCRs also provide flexibility and alternative options to comply with the runoff retention performance requirement in the small percentage of sites in the region where it would be technically infeasible. Where a project can demonstrate technical infeasibility to fully achieve the runoff retention performance requirement on site, it must dedicate 10 percent of the project's equivalent impervious surface area to retention-based stormwater control measures, or pursue compliance off-site through alternative compliance. This will be necessary in very few circumstances, and moreover, the RWQCB has provided funding for research on alternative compliance strategies that will provide guidance and assistance for permittees to establish alternative compliance programs for the limited cases where offsite mitigation will be necessary. Such strategies could include off-site mitigation banking to provide funding for municipal LID projects such as street or parking lot retrofits. No shortage of such potential projects exists, and we believe the proposed requirements offer municipalities a tremendous opportunity to invest in infrastructure improvements to benefit water quality and water supply in critical areas. The revised PCRs now under consideration also provide additional relief for redevelopment projects in high-density urban areas. For projects in these areas, the replaced impervious surfaces will only have to match existing, pre-project runoff retention. As such, qualified infill projects will bear no costs to meet the runoff retention requirements if they are simply redeveloping existing impervious surfaces. This allowance for approved Urban Sustainability Areas provides a reasonable approach to accommodate urban infill projects while maintaining needed water quality protections and beneficial uses. Finally, the PCRs also provide relief for projects subject to special circumstances, by exempting such projects from runoff retention and/or peak management performance requirements where they would be ineffective to maintain or restore beneficial uses of receiving waters, such as highly altered channels or historic lakes and wetlands. With regard to the requirement to prevent offsite discharge from events up to the 95th percentile 24- hour rain event, this is an appropriate standard and is critical for protecting the Central Coast's sensitive waterbodies while also providing for groundwater recharge. There is precedent for the 95th percentile retention requirement - Section 438 of the Energy Independence and Security Act (EISA) requires new federal facilities to retain runoff from the 95th percentile 24-hour rain event. This is the best standard currently in use that addresses the full suite of watershed processes affected by urban runoff. Moreover, the retention runoff requirement is not required everywhere throughout the region, but only in those areas where infiltration is dominant or surface runoff is minimal. Santa Barbara Channelkeeper applauds the RWQCB's commitment to implementing LID throughout the Central Coast region, and commends the significant financial investment (more than $2 million) you have made to provide technical support to advance LID as a multi-beneficial and effective means of managing stormwater. This investment laid the groundwork for successful implementation of LID

throughout the region, and the PCRs represent the culmination of more than four years of concerted effort by your staff to provide a reasonable and scientifically rigorous framework to address the full range of watershed processes affected by urban stormwater while also accommodating the needs and concerns of the municipalities. The PCRs are appropriate, effective and necessary requirements for small MS4s to apply to development and redevelopment projects in order to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) and prevent stormwater discharges from causing or contributing to violations of water quality standards. They emphasize protecting and, where degraded, restoring key watershed processes so that beneficial uses of receiving waters affected by stormwater management are maintained, and where applicable, restored. The PCRs provide an effective framework for ensuring that permittees utilize LID tools to reduce discharges from new and redevelopment projects to the MEP, as required by the Clean Water Act. These requirements were supposed to be implemented more than two years ago, but were extended numerous times to address and accommodate municipalities' concerns, thus delaying the implementation of necessary water quality protections. Now, another two years later, the revised PCRs are ready and represent a reasonable and necessary step to address the adverse environmental impacts associated with new development and redevelopment in the Central Coast region. In addition, the State Water Resources Control Board (SWRCB) has indicated its intent to develop runoff retention and hydromodification control criteria that are keyed to watershed processes, as your staff have done, and will likely incorporate the Central Coast's process-based runoff retention and hydromodification criteria into the next Phase II MS4 permit. Given this fact and the four years of effort that has been put into developing the proposed PCRs, it would be nonsensical not to adopt them at this time. The Central Coast RWQCB has provided leadership and laid the foundation for much-needed improvements to how stormwater runoff from development and redevelopment is managed throughout California, and the time has come to take the next step and put them into practice. Despite the predictable and pro forma protestations of the permittees, it is incumbent upon you as the regulatory agency tasked with protecting water quality in the Central Coast region to implement regulations such as the proposed PCRs to compel municipalities to meet the MEP standard and better address the widespread harm caused by stormwater runoff from development and redevelopment, which impairs water quality, impedes the achievement of beneficial uses and damages aquatic and riparian habitat in our region. Santa Barbara Channelkeeper strongly urges you to support your staff's recommendation to adopt the revised PCRs at your July 12th hearing and to make them effective September 6, 2013. We simply cannot afford further delay in addressing the significant detrimental impacts of stormwater runoff from development and redevelopment projects on water quality and beneficial uses. Thank you for your consideration of the above comments, and your continued commitment to protecting water quality in the Central Coast region.

Staff Response to Comment Santa Barbara Channel Keeper – 1
Central Coast Water Board staff notes Santa Barbara Channel Keeper's support of the Draft PCRs.

■ **Monterey County Association of Realtors – 1**
There is a well-established process for Code Adoption, which is through the Building and Standards Commission, often referred to as the "Code Adoption Process." These proposed regulations appear as building codes, yet they are coming into existence as regulation rather than through the procedural code adoption process. This creates the situation where this regulation could be in conflict with either the current Building Codes, or with future Building Codes.

We believe that these rules could be simplified. An example is that if a Project site is less than 50% 'Site Coverage', then the requirements can be met on that site via prescriptive BMP's. As such, this would require certain practices to become the standard, and would negate the necessity of having ongoing monitoring or other costly ongoing expenses to a project. This example, of using a "Site Coverage" calculation as a method for being able to determine if a project site is likely to be able to meet the intent of these proposed rules, and then allowing a series of prescriptive BMP's to meet that requirement, is just one of several ways to simplify these complex proposed rules.

The MCAR Board of Directors respectfully requests that the Regional Board NOT adopt this Resolution but instead; submit the Stormwater rules into the normal Code Adoption Process via the Building and Standards Commission. As such, the appropriate rules can become part of the Building Code, which includes the new California Green Building Code, known as CALGREEN.

We strongly encourage the Regional Board to consider elimination of the "in perpetuity" language as it has the potential to negatively impact real estate transactions and more specifically, "clouding title" on a property. Finally, we believe this Resolution will have significant and measurable effects on both the natural and the built environments. We also believe these rules can negatively affect Life-Safety. We request that a full Environmental Impact Report (EIR) be done to properly analyze and disclose to the public and the decision-makers the various potential impacts from the adoption of this Resolution.

Staff Response to Comment Monterey County Association of Realtors – 1
Regarding the comment about the code adoption process see Staff Response to Comment American Institute of Architecture CA Council – 1.

Regarding the comments about 50% site coverage, "in perpetuity" language, and the California Environmental Quality Act process see Staff Response to Comment American Institute of Architecture, Monterey Bay – 1.

■ **Monterey County Farm Bureau – 1**
We offer the following observations when considering the post construction requirements for stormwater:
• These rules are overly complex and difficult to understand. We expect widespread confusion when attempting to implement these requirements.
• As applied to urban infill projects, these requirements present a disincentive for developments that utilize existing disturbed surfaces. Some of these infill lots have limitations that make the implementation of stormwater measures virtually impossible to achieve at any price. We support redevelopment of in fill areas where possible, but these new requirements will have the unintended consequences of urban sprawl and further conversion of farmlands for development.
• On site water collection causes a number of geological triggers that could ultimately undermine a project foundation and its overall stability. These are counter-intuitive to keeping water collection sources away from buildings and developed areas.
• We raise concerns that more ministerial actions are being regulated into discretionary decisions. This adds complexity to project approvals, unneeded burdens to local jurisdictions, and wasted efforts reworking project plans.

Monterey County Farm Bureau requests that these post construction requirements not be adopted at this time. Construction businesses are still recovering from the economic recession

and additional burdens should not be a further obstacle to promoting economic recovery. Additionally, all business in Monterey County are facing a number of new regulations that other agencies are imposing, making the regulatory burden unsustainable for small to mid-size business owners.

Staff Response to Comment Monterey County Farm Bureau – 1
Regarding the comments about complexity of the requirements and on-site water collection, see Staff Response to Comment American Institute of Architecture Monterey Bay – 1.
Regarding the comment about deterrence of urban infill projects, see Staff Response to Comment Goleta – 23.
Regarding the comment about requirements for ministerial project, see Staff Response to Comment City of Monterey – 1.

■ **Central Coast MS4s – 1**
Procedural issues with PCR Implementation Schedule
As previously stated in comments submitted at the March 14-15, 2013 Central Coast Regional Water Quality Control Board (CCRWQCB) meeting, the direction provided to us by the Board to expend valuable time and resources to approve enforceable mechanisms for the PCRs before they had been adequately reconsidered and re-adopted by the Board at public hearing, was of great concern to all Central Coast municipalities. We determined that it was not prudent use of public resources to move forward into local Code revisions and adoption of other enforceable mechanisms across the entirety of the Central Coast until all stakeholders had had an opportunity for public comment on the revised PCRs and the revised Resolution had been adopted by the Board.

The Draft Resolution requires that municipalities begin implementation of the PCRs to all regulated projects by September 6, 2013. This proposed schedule provides less than two months from the Public Hearing date of July 12, 2013 for municipalities to revise Codes and/or adopt other enforceable mechanisms to implement the PCRs. Although municipalities in the Central Coast have diverse procedures to revise Codes and/or adopt enforceable mechanisms to implement the PCRs, these 2 procedures all require municipalities to engage significant staff time and resources as well as follow proper public information procedures.

Attachment 1 provides detailed itemization of the procedures required for enforceable mechanism adoption in each municipality assuming a starting date of mid-July 2013. As shown in the attachment, meeting the September 6 deadline will be virtually impossible for most municipalities.

Staff Response to Comment Central Coast MS4s – 1
Central Coast Water Board staff proposes a six-month extension of the September 6, 2013 implementation deadline for the Draft PCRs to provide Permittees additional time to prepare. The new proposed deadline for implementation is March 6, 2014. Central Coast Water Board staff has revised the Draft Resolution and Draft PCRs to reflect this extension.

■ **Central Coast MS4s – 2**
Technical Issues to Be Addressed Before PCR Implementation
We've appreciated the efforts that Water Board staff has made to bring about greater transparency and stakeholder involvement in the development of the PCRs. As a part of the Joint Effort and PCR development, Regional Board staff has engaged the Joint Effort Review

Team (JERT), a small workgroup of Central Coast permittees that have worked diligently with your staff and have been instrumental in problem-solving some broad issues.

There are several important issues and questions that are still outstanding and that should be addressed by the JERT before municipalities begin enforcing the PCRs so that their implementation can be effective and consistent throughout the region. These issues include the following:

- Retention Facility Sizing Method: Attachment D to the PCRs allows a "routing method" for sizing retention facilities. Under the routing method, the response of an infiltration facility to the runoff hydrograph produced by a design storm (85th percentile or 95th percentile storm) is tracked in 6-minute increments. For each time increment, the routing method tracks the volume of inflow to the facility, the volume stored within the facility, and the volume infiltrated into the ground. The calculation is iterated to find the minimum storage volume required to hold and then infiltrate the design storm. Under this method, facility sizes will be very sensitive to the rate at which runoff infiltrates into the ground. This is especially true for less-permeable soils, where estimates and test results can vary by 50%-100%. For example, in a site with clay soils, infiltration rate tests and estimates from the same site could vary from 0.05 to 0.1 inch/hour. The resulting facility size calculation would likewise vary by a factor of 2. This creates substantial uncertainty for applicants and will require municipal staff to make judgments under pressure.

  Additionally, the PCRs are written to mandate retention of runoff equal to the volume of either the 85th percentile or 95th percentile storm. These criteria are applied without regard to the preproject or pre-development hydrologic or geologic characteristics of the specific development site. This is counter to the intent of the Joint Effort, which sought to develop a program that would preserve or restore pre-development watershed processes. Under the PCR criteria it may be easier, and less expensive, to develop highly permeable sites than to locate development on less-permeable soils. This is because, by some of the allowed methods of calculation, a smaller facility would be needed to infiltrate the volume of an 85th or 95th percentile storm on a highly permeable site, and a larger facility would be needed on a site with less-permeable soils. Using a continuous simulation analysis of pre-project and post-project flows would allow sizing so that post-project flow rates and durations would be kept within the flow rates and durations that existed in the pre-project or pre-development condition. This would thus require more infiltration on sites with permeable soils and less infiltration (allowing more runoff) on sites with less-permeable soils. The language in PCRs Section B.4.d.vi. regarding continuous simulation is obviated by the language in PCRs Section B.4.c., which mandates retention of the volume of a specific storm (85th percentile or 95th percentile) regardless of whether a specific site in its pre-development condition has highly permeable soils or impermeable soils. The PCRs should be modified to allow the use of continuous simulation analysis of pre-project and post-project flows to allow sizing to keep post-project flow rates and durations within the flow rates and durations of predevelopment conditions. Additionally, sizing procedures included in Attachment D should be further reviewed and refined through the JERT process to arrive at defensible and manageable methods.

- Procedures for demonstrating Technical Infeasibility: Related to the retention facility sizing method above, PCR Section B.4.e. allows an "off-ramp" if it is "technically infeasible" to retain the volume produced by the 85th or 95th percentile storm. In this case a development project may comply with the PCRs if it dedicates "no less than ten percent of the Regulated Project's Equivalent Impervious Surface Area to retention-

based Stormwater Control Measures." However, neither Section B.4.e. nor the referenced Attachment E state what a definition of the term "retention-based Stormwater Control Measures." It would thus be possible for a development project to comply by incorporating facilities to retain some arbitrary lesser volume and by meeting the 10% area requirement with depressed landscaped areas, pervious pavement, and the like. Clearer guidance on technical infeasibility determination and allowed retention-based stormwater control measures needs to be developed to provide consistent implementation throughout the region.

- Determination of Urban Sustainability Areas: PCR Section C.3. allows the establishment of "Urban Sustainability Areas" (USAs) by municipalities and eliminates the retention requirement for redevelopment projects within USAs, requiring only that existing on-site retention be maintained. The USAs "may only encompass redevelopment in high density urban centers… that are pedestrian-oriented and/or transit-oriented development projects intended to promote infill of existing urban areas," but must be proposed by the Permittee and approved by the Executive Officer. The criteria for Board approval of the USAs are unclear in the PCRs and need to be further refined through the JERT process in order to provide clear guidance to municipalities that are interested in designating a USA.

Recommendation. For the prudent use of public resources across the Central Coast, to provide legal substantiation of local Code and enforceable mechanism adoption procedures, and to allow time for the JERT to address important implementation issues and questions, we request the following timeline to begin enforcement of the PCRs at the local level:

- *Six (6) months from the date of Regional Board adoption of the final Resolution and PCRs;*

Staff Response to Comment Central Coast MS4s – 2
Central Coast Water Board Staff does recognize implementation of post-construction stormwater management requirements will be a new experience for many Permittees and staff intends to continue working closely with permittees and other stakeholders throughout implementation of the Draft PCRs to address issues of technical feasibility.

The routing method is an accepted method within contemporary engineering/design practice. Its sensitivity to variations in infiltration rates is intrinsic to the method. Because of this sensitivity, designing engineers are inclined to obtain the most accurate estimates of infiltration rates available at a reasonable cost.
Also see Staff Response to Comments: Santa Barbara County (Dan Cloak) – 6, 8, and Goleta – 17.

■ Wallace Group – 1
Retention of the 85th and 95th Percentile Storm Event
We have reviewed rain gauge data for a number of locations on the Central Coast and found that the 95th percentile storm is between 1.5 to 2 times greater than the 85th percentile storm. For an undeveloped site, only extremely well draining soils or terrain with natural sump conditions will retain the 95th percentile event, and likely only in unsaturated conditions. The widespread application of this requirement on the Central Coast would result in increased infiltration beyond the natural response, which could be detrimental to the receiving streams and watershed health.

The basis for 95th percentile storm retention is Section 438 of the Energy Independence and Security Act (EISA). However, the Requirements do not reference the full text of Section 438 which lists the 95th percentile requirement as one of two options for compliance. The second option is a site specific analysis, in order to match existing hydrologic conditions. Per the EISA document:

> "the performance based approach in Option 1 (Retain 95th) is intended to be a surrogate for determining the pre-development reference condition and this standard is intended to be used in cases where it is more practical, cost effective, and/or expeditious than Option 2 (Site Specific Hydrologic Analysis), or where it is difficult or infeasible to identify the relevant reference conditions for the site." (EPA 841-B-09-001 Page 16).
>
> ""Option 2 could also be used if predevelopment runoff conditions can be maintained by retaining less than the 95th percentile rainfall event." (EPA 841-B-09-001 Page 12)

We recommend a requirement similar to EISA Section 438, to retain a specific storm event or match existing hydrology.

References

- The EPA Energy Independence and Security Act (EISA) provides two options for compliance with hydromodification requirements:
  - Option 1: Retain the 95th Percentile Storm Event, or
  - Option 2: Site Specific Hydrologic Analysis
- Potential negative effect of increased infiltration*: "In some locations upgradient of an ephemeral stream, increased infiltration may cause undesirable habitat type changes downstream of the site due to increased periods of base flows that result in vegetation changes. There has been a lack of consideration of the overall water balance effects that a "retention on site" requirement may have in terms of habitat."* (Strecker and Poresky)

Summary of Recommendation

- Prepare a cost-benefit analysis for retention of the 95th percentile storm compared to the 85th percentile storm
- Evaluate the possible detrimental effect of bioretention causing reduced surface flow to receiving streams, or increased subsurface flow to ephemeral streams
- Modify the Requirements to retain a specific storm event or match existing hydrology

Staff Response to Comment Central Coast MS4s - 1

See Staff Response to Comments: CASQA – 1, 6 and Goleta – 9 regarding Option 2 and continuous simulation modeling as a site specific hydrologic analysis.

The predominant effect of urbanization is the substitution of subsurface flow with surface flow and an increase in runoff volume over natural predevelopment conditions. As new development occurs, maintaining predevelopment runoff on individual sites does not address the existing impacts to receiving waters that has occurred up that point.

Because the Draft PCRs allow for ample reductions of retention volumes generated by the proxy objective, the occurrence of oversizing would be expected to be very low. For example,

retention of all runoff from the 95th percentile 24-hr event is not required in redevelopment projects (from replaced surfaces only 50 percent of runoff must be retained). This results in smaller retention facilities potentially undersized for matching actual predevelopment conditions. Additionally, where technical infeasibility of retaining the full retention volume on a particular site is demonstrated, a regulated project can instead dedicate ten percent of its equivalent impervious surface area to retention-based structural control measures. Though the potential for the Draft PCRs to retain more than predevelopment conditions is low, thanks to these adjustments, where over retention does in fact occur, the scale at which it occurs is likely insignificant relative to the overall impact of surrounding impervious surfaces.

Central Coast Water Board staff anticipates that the modest pace of redevelopment and the limited scale of reductions in surface runoff volumes will generally limit habitat changes potentially resulting from application of the Draft PCRs. Furthermore, changes should be positive as increased interflow and groundwater recharge have a generally positive influence on aquatic vegetation by increasing watercourse base flows over existing conditions. For example, in a Case Study of the Hydrologic Benefits of On-Site Retention in the Central Coast Region (Technical Support Document, Attachment D), under dry, summer conditions, base flows are depleted by factors ranging from 2 to 7 if no on-site retention is provided. The case study concludes: "The depletion factor is directly related to the intensity of development as indicated by the percentage of impervious surface. However, with on-site retention facilities, base flows are actually augmented over the baseline case pre-development condition. This "over mitigation" may be restorative to varying degrees in stream basins where summer base flows may have been depleted by previous development that did not implement on-site retention."

■ **Wallace Group – 2**

Feasibility of Retention in Type C and D Soils

The section on Feasibility of Achieving Retention in the Regional Board's Technical Support Document makes reference to a study by Horner and Gretz. The Horner and Gretz study provides important insight as to the practical meaning of implementing the proposed standards on various soils. Many areas of the Central Coast have Type C and D soils. Table 6 of the Support Document indicates that 46 percent of the urban areas on the Central Coast are Type C and D soils. The Horner and Gretz Study evaluated sample projects on all types of soils in various communities, with the most representative of Central Coast conditions being the Southwest Climate case study. Most areas of the Central Coast would have greater rainfall than the Southwest Climate (9.68 inches annually).

The Requirements Performance Standard No. 3 Runoff Retention requires that projects retain the runoff from either the 85th or 95th percentile storm, depending on the Watershed Management Zone (WMZ). The WMZ designations are not correlated with the surface soil types and therefore there are Type C and D (poor infiltrating) soil types that would be required to retain the 95th percentile storm.

The Horner and Gretz Study notes the following regarding Type D soils:

Pg 34: *"Standards 2 and 3 were never estimated to be met in any Type D soil case".* In the study Standard 2 is the ability to retain the 95th percentile storm – rephrasing this, the study is indicating that it is not feasible to retain the 95th percentile storm in a development on Type D soils, even when using Full ARCD (defined below).

The Horner and Gretz Study assumed the use of "Full ARCD" on Type D soils. In the study Full ARCD includes roof runoff management techniques and the report commented on how this might be done:

Pg 25: *"For retail commercial development (COMM), roof runoff management was assumed to be accomplished by harvesting, temporarily storing, and applying water to use in the building…the assumption was made that commercial development would be able to manage and would have the capacity to store and make use of the entire roof runoff volume…this particular assumption is, on its own, speculative…"*. Therefore, according to the study, projects on Type D soils, and many on type C soils, would have to store their entire roof runoff, and install a dual plumbing system (rain water for non-potable use in the building), in order to partially achieve the standard. We question the cost-benefit and ability to store 100 percent of roof runoff, and whether it is widely understood that this was the basis for evaluating feasibility.

The Horner and Gretz Study also made assumptions related to the use of the pervious areas of a project. For Type D soils, the assumption is that 100 percent of pervious areas "*would be required (*for bioretention*) to achieve given results"* (Table 15, and footnote b Table 12). We believe that the assumption of 100 percent of pervious areas being used for bioretention is neither feasible nor cost effective.

In summary, the Horner and Gretz study, concludes the following for projects in the Southwest region:

- Retention of the 95th percentile storm **cannot** be met on Type D soils
    - Even with 100 percent storage and graywater use of roof water; combined with
    - 100 percent of pervious areas being used for bioretention.
    - Also note that the Southwest region average annual rainfall (9.68 inches) is less than most areas of the Central Coast

- Retention of the 85th percentile storm:
    - Can be met for the Southwest region (average annual rainfall = 9.68 inches);
    - In comparison, can be met for the South Central region (average annual rainfall = 32.67 inches) assuming 100 percent of pervious areas being used for bioretention for commercial and redevelopment projects.

In reviewing site feasibility, the Horner and Gretz Study also evaluated the effect of the proposed measures on total annual runoff. The study noted "*with effective infiltrating bioretention it is possible for post-development annual recharge to exceed the pre-development quantity*" (Pg 28), and "*one reason … is that bioretention is set up to hold water, increasing the time for infiltration to occur instead of letting it runoff*" (Pg 28). In fact – some of their scenarios show 100 percent infiltration is possible where it does not occur naturally (Tables 8-15). The focus of the study is that the more retention the better – to further reduce pollutants - but we believe that runoff is essential to the receiving streams and that over-retention is undesirable.

We recommend that the assumptions and ramifications of the Horner and Gretz Study be carefully considered and the Requirements and Technical Support Document be modified accordingly, as summarized below.

<u>Summary of Recommendation</u>

- Relate the retention and treatment Requirements to surface soil types which control site infiltration capability

- Highlight the need for roof runoff storage and graywater systems to meet the Requirements, and evaluate the feasibility and cost-benefit
- Highlight the need for 100 percent of pervious areas being required for bioretention, and evaluate the feasibility and cost-benefit

Staff Response to Comment Wallace – 2

The Draft PCRs relax the requirement to retain runoff from the 95th percentile 24-hr rainfall event where it is technically infeasible to do so (See Staff Response to Comment CASQA 2 regarding technical and economic feasibility). Nevertheless, given the comment's presentation of information from a study (Horner and Gretz, 2011) that Central Coast Water Board staff also cites to indicate the feasibility of retaining the 95th percentile event, it is important to further describe the study, the conservative assumptions upon which its analysis are based, and the authors' own conclusions.

The study was designed to evaluate the degree to which LID practices, which the study refers to as Aquatic Resources Conservation Design (ARCD) practices, can retain runoff and meet various possible regulatory standards, including retention of the 95th percentile 24-hr precipitation event. Infiltrating bioretention was applied as an initial strategy in the analysis of five urban land use scenarios on two common soil types. When the initial strategy could not fully retain post-development runoff, additional methods were applied, including roof runoff harvesting and roof runoff dispersion.

The comment, as well as the Technical Support Document (Attachment 2 of Draft Resolution R3-2013-0032), identifies some of the results of the analysis with respect to the amount of runoff that could be retained on projects on varying soil types. However, these results are best considered in light of the assumptions Horner and Gretz made in conducting the analysis:
"A number of conservative assumptions were built into the analysis to ensure that the capabilities and benefits of ARCD would not be over-estimated. In summary, these assumptions are:
- No retention credit for evapotranspiration in the Basic ARCD strategy, although generally a substantial amount would occur, and consideration of evapotranspiration only for roof runoff in the Full ARCD strategy;
- Letting aside many available ARCD practices and site design principles that could be employed to reduce the runoff quantity, and the pollutants it transports, by reducing impervious surface area or directing the runoff to bioretention, harvesting, and dispersion facilities;
- The assumption of no infiltration on hydrologic soil group D soils, although some infiltration occurs at finite rates even on clay;
- Application of a safety factor to estimated infiltration rates (taken as 0.5 times the typical rate for the soil type);
- Minimum bioretention cell depths, so that these facilities would not be disruptive to site design and could be put to other uses;
- Requiring a 48-hour drawdown time for bioretention, instead of the 72-hour maximum;
- An analysis to guard against groundwater mounding under bioretention cells, with conservative assumptions for horizontal and vertical hydraulic conductivity rates; and
- An analysis demonstrating that doubling topographic slope changes results by only a few percent." (p. 41).

The five potential regulatory standards included: 1) retention of the 85th percentile, 24-hour precipitation events, 2) retention of the 95th percentile, 24-hour precipitation events, 3) retention of 90 percent of the post-development runoff, 4) retain the difference between the post- and pre-

development runoff, and 5) retain the difference between the post- and pre-development runoff, up to the 85th percentile, 24-hour event. The authors found:
"The projected ability to meet the five standards varies mostly in relation to soil type (B or C versus D) and the relative imperviousness of development, and much less across climate regions, except for the relatively arid Southwest.

"The only standards that cannot be fully met on B and C soils by the ARCD methods considered are standards 2-4 for the COMM case. Of the 125 standards assessments, ARCD practices are projected to meet 113 (90.4 percent) with B and C soils. The ability to meet these standards is much reduced on D soils. Only standards 1 (85th percentile, 24-hour precipitation event, and 4 and 5 (related to the difference between the post- and pre-development runoff) can be met occasionally and under limited conditions using Full ARCD methods. However, even on D soils, all cases for Standard 1 were able to retain greater than 50 percent of the required runoff volume.

"Standard 3 (retain 90 percent of the average annual post-development runoff volume) would be the most environmentally protective standard. Meeting or coming as close as possible to meeting, but not exceeding, this standard was estimated to lead to 66-90 percent runoff retention and pollutant loading reduction on B and C soils and 37-66 percent on D soil. Standard 2 (retain the runoff produced by the 95th percentile, 24-hour precipitation event) would yield equivalent protection on D soils and only slightly less protection with B and C soils.

Standards 4 and 5, based on the differential between pre- and post-development runoff volume, are very inconsistent in retaining runoff and reducing pollutants. They are highly protective where pre-development runoff is estimated to be very low relative to post-development flow, and then to result in progressively lower retention and loading reduction as pre- and post-development volumes converge. Standard 5 is especially weak in this regard. This inconsistency makes these standards poor candidates for national application, at least as formulated in these terms.

"Fully meeting standard 1 (retain the runoff produced by the 85th percentile, 24-hour precipitation event) would yield runoff retention and pollutant mass reduction ranging from 58 to 81 percent, depending on climate region. This level of inconsistency decreases the utility of this standard to some degree. Standard 2, based on the 95th percentile event, is much better in this respect, with variability in runoff retention and loading reduction across the nation in the much narrower 82-89 percent range. However, standard 1 remains more consistent across regions, and more protective of water quality for development on D soils than either standard 4 or 5, and is preferable to those standards in this regard.

"In summary, standards 2 and 3 are clearly superior to the other three options. Standard 3 is entirely consistent from place to place in degree of environmental protection, and standard 2 does not deviate much. Analysis of the five development cases on two soil groups in each of four regions demonstrated the two standards are virtually identical in the runoff retention and pollutant loading reduction they would bring about." (pp. 42, 43)

Central Coast Water Board staff finds the Horner and Gretz study's general support for the 95th percentile 24-hr retention standard to lend support to that standard's use in the Central Coast Region. Considering the conservative assumptions upon which the analysis was based, staff finds it reasonable to conclude that additional retention would be possible under actual conditions of implementation.

The April 8, 2013 study included in Attachment G of the Technical Support Document was completed to provide methods for sizing facilities that comply with the PCR retention requirements. One method relies on a conventional hydrograph routing approach that results in retention facilities known to be technically feasible because they are generally equivalent in size to facilities used in other localities with similar constraints on feasibility. The study states:
"Another way to evaluate feasibility of the Draft PCRs is to look at retention requirements in terms of unit storage volume, that is, cubic feet of storage required per square foot of impervious surface. Multiple agencies in California have developed design criteria for peak flow control based on local continuous simulation modeling, which includes a minimum unit storage volume...By comparison, a hydrograph routing approach to SCM sizing with the PCR retention volume results in unit volumes ranging between 0.03 to 0.162, generally equivalent to the Contra Costa criteria." (Technical Support Document, Attachment G, p. 8)

Further considering the adjustments to the retention requirement provided in the Draft PCRs, Central Coast Water Board staff finds that the Draft PCRs are reasonable.

See Staff Response to Comment MS4s – 1, regarding potential risks and consequences of over-retention.

■ Wallace Group – 3
Regional vs. Parcel Scale Analysis
We are concerned with the approach of the Requirements to specify hydromodification controls at the parcel level. The greatest level of hydromodification control, and therefore watershed protection, could be achieved by evaluating overall development potential and land use changes from a watershed scale perspective. Parcel scale analysis may not reveal cumulative effects of development, and lead to inefficiency in the design and review process. Multiple parcel scale evaluations for different sites within the same watershed may provide little to no regional information while being redundant and rigorous in nature.

Agencies need the flexibility to plan for hydromodification within and throughout designated land use zones. For example, a single mixed-use parcel could be built to maximum density, accommodating businesses and high density housing, with a nearby parcel maintained as an open space park. If approached on a parcel scale, both parcels would be developed, and two smaller open spaces would be created. The single larger open space would have a higher value for the community, as it could function as a neighborhood gathering spot within a densely developed area, and accommodate a wider variety of recreational uses.

The Requirements include provisions for permittees to submit a Watershed or Regional Plan for consideration by the Regional Board, specific to Off-Site Compliance. However, it is not clear that multiple projects could be analyzed and designed for compliance together, without the need for a full "Regional" plan.

<u>Summary of Recommendation</u>

- Include provisions for combining parcels and projects in a single evaluation, in lieu of a Regional analysis

Staff Response to Comment Wallace – 3
Central Coast Water Board staff concurs with comment that parcel scale analysis may not reveal cumulative effects of development (see fifth paragraph of Staff Response to Comment

CASQA 6). Staff further agrees that "the greatest level of hydromodification control, and therefore watershed protection, could be achieved by evaluating overall development potential and land use changes from a watershed scale perspective." This is the basis for the Watershed Plan and Regional Plan options provided in the Draft PCRs Alternative Compliance provisions. The developer fee-in-lieu arrangements and/or use of regional facilities allowed under these provisions must be based on an appropriately scaled analysis of the hydrologic and watershed conditions potentially affected by Regulated Projects.

Staff would need additional information on the particular scenario presented in the comment to determine how the Alternative Compliance provisions would apply. However, assuming common ownership or control of both parcels, the off-site mitigation provisions in the Draft PCRs would potentially yield the outcome preferred by the commenter; i.e., a single larger open space.

■ **Wallace Group – 4**

COMMENTS TO SPECIFIC SECTIONS OF THE POST-CONSTRUCTION CRITERA

The following comments apply to specific items within the Draft Post-Construction Requirements, and are organized by Page Number and Section.

Page 1 Item B.1. Definition of Regulated Projects.

The current definition of regulated projects includes upgrade from "bituminous surface treatment" to asphalt or concrete. This item should be removed, as it represents a replacement of one impervious road surface with another. Within Attachment C, the definition of impervious surface includes "oiled, macadam, or other surfaces which impede the natural infiltration of stormwater." A roadway treated with a "bituminous surface treatment" clearly fits within the Board's definition of impervious.

The current definition of regulated projects excludes "Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage." In some cases, asphalt or concrete must be fully replaced due to degradation or other site conditions that preclude overlayment. We recommend that this definition is modified to include either overlayment or full replacement of asphalt or concrete. This change would also make this section consistent with the definition of "Routine Road Maintenance" in Attachment C, which includes "resurfacing with in-kind material."

Summary of Recommendation

- Modify item B.1.a.iii as follows: "Resurfacing by upgrading from dirt to asphalt, or concrete; **or** upgrading from gravel to asphalt, or concrete~~; or upgrading from a bituminous surface treatment ("chip seal") to asphalt or concrete~~."
- Modify the definition of regulated projects to exclude "overlaying **or replacing** existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage".

Staff Response to Comment Wallace – 4

Central Coast Water Board staff considers bituminous surface treatment an impervious surface. However, a bituminous surface treatment is typically more porous than conventional concrete and asphalt. Therefore, Central Coast Water Board staff finds that if a project replaces a bituminous surface treatment with a more impervious surface, that project should be subject to the Draft PCRs if it meets the size thresholds.

Draft PCRs Section B.1.b.i(6) already specifies that Regulated Projects do not include, "Resurfacing with in-kind material without expanding the road or parking lot." However, Central Coast Water Board staff finds that the removal of existing impervious surfaces down to bare soil or base course, and replacement with new impervious surface is not considered routine road maintenance and is not exempt from the Draft PCRs. Central Coast Water Board staff finds that full replacement of road surfaces essentially constitutes redevelopment and provides an opportunity to improve stormwater management.

■ **Wallace Group – 5**

Page 2 Item B.1.c.ii. Confusing reference to Equivalent Impervious Surface Area.

The PCRs use the term "Equivalent Impervious Surface Area" (EISA) for demonstrating compliance with the retention requirement in the case of technical infeasibility (Attachment E). This term is not included in the text for the individual Performance Requirements. However, this Section of the PCRs reads that "Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements shall apply to the Regulated Project's entire Equivalent Impervious Surface Area for the site." This is inconsistent with the individual Performance Requirements, which reference Tributary Area. We recommend that this Section is modified to remove reference to EISA.

Summary of Recommendation

- Modify this Section as follows: "Water Quality Treatment, Runoff Retention, and Peak Management Performance Requirements shall apply to the Regulated Project's **Contributing Area** ~~entire Equivalent Impervious Surface for the site~~."

Staff Response to Comment Wallace – 5

Central Coast Water Board staff modified the Draft PCRs in response to this comment. The intent of Draft PCRs Sections B.1.c and B.1.d was to specify what portion of a Regulated Project site must adhere to each Performance Requirement. To clarify this intent, Central Coast Water Board staff deleted the references to the Runoff Retention and Peak Management Performance Requirements, because Sections B.4 and B.5 already address which portions of a Regulated Project site must adhere to the Runoff Retention and Peak Management requirements. Central Coast Water Board staff moved the requirements related to the Site Design and Water Quality Treatment Performance Requirements to the individual requirements in Sections B.2.a and B.3.b, respectively.

■ **Wallace Group – 6**

Page 8 Item 4.d.iv.1 Undisturbed and Natural Landscape Areas

This section reads that "undisturbed or areas planted with native vegetation" can be omitted from the calculation for retention volume runoff if they do not receive runoff from other areas. We recommend removing the term "native" for this requirement. There are numerous drought tolerant and LID friendly plants that could be used on a site that are not "native" to the Central Coast. For example, the recommended plant list for bioretention prepared by Central Coast Low Impact Development Initiative includes plants that are non-natives. This item should also be consistent with the Attachment E definition for contributing pervious area, which excludes "natural and undisturbed landscape areas" and areas compliant with water efficient landscape ordinances.

Summary of Recommendation

- Modify this Section as follows: "Undisturbed or areas planted with ~~native~~ vegetation that do not receive runoff from other areas may be considered self-treating…"

Staff Response to Comment Wallace – 6
In response to this comment, Central Coast Water Board staff revised Draft PCRs Section B.4.d.iv(1) and the definitions for Self-Treating Areas and Tributary Area in Attachment C.

■ Wallace Group – 7
Page 12 Item 6.b.i.1. Performance Requirements for Highly Altered Channels and/or Intermediate Flow Control Facility Special Circumstances.
This Section allows for the use of a pre-existing stormwater flow control facility to meet Performance Requirement 4, Peak Flow Management. However, these same existing stormwater flow control facilities may also provide retention, and therefore could also serve to meet Performance Requirement 3, Runoff Retention. The applicant would be required to demonstrate that the existing facility would provide the flow control benefit, and could demonstrate the runoff retention requirement through the same analysis.

Summary of Recommendation

- Allow project applicants to use existing Flow Control Facilities to meet the Runoff Retention Requirement, with demonstration of facility capacity to perform this function.

Staff Response to Comment Wallace – 7
The existing stormwater control facilities suggested by the comment are inferred to be regional facilities, given they already exist and are able to control stormwater from projects not yet constructed. Such regional facilities would be the appropriate subject of Regional Plans as provided in Draft PCR Section C.2 Alternative Compliance. This provision would allow the Permittee, on behalf of a project applicant, to submit a proposal to the Executive Officer to use existing flow control facilities to meet the runoff retention requirement. Both the Central Coast Water Board and the State Water Board recognize the potential for regional facilities to support the protection of watershed processes, provided the regional facilities are upstream of receiving waters.

■ Wallace Group – 8
Page 13 Item C: Alternative (Off-site) Compliance
Item C1.c is a list of "Technical Infeasibility" examples, describing various reasons why LID principles may not be feasible or appropriate for a site. In the case that meeting requirements onsite is infeasible, offsite compliance would be required. The natural site constraints identified as infeasibility criteria limit what can be achieved through LID site planning and design efforts. Some of the examples, such as high groundwater and low depth to an impervious soil layer, would also prevent or limit natural infiltration and associated stormwater retention on an undeveloped site. In these cases, adding retention requirements, even offsite, could result in unnatural hydrology. With the goal of the requirements being to match existing conditions, rather than requiring off-site compliance, if a site cannot meet retention criteria due to technical infeasibility, then a "maximum extent practicable" clause should apply.

Staff Response to Comment Wallace – 8
See Staff Response to Comment Lompoc – 4 regarding the natural hydrologic response of a site in the context of the area around it.
See Staff Response to Comment Goleta – 20, 21 regarding MEP.

■ **Wallace Group – 9**
Some of the constraints identified for technical infeasibility also represent site conditions where forcing infiltration could lead to geotechnical or other hazards. For example, under the current Requirements, a site with a shallow depth to bedrock would be required to either dedicate 10-percent of the site area to retention or provide the equivalent land area off-site. Forcing infiltration on such a site would not achieve the goal of natural runoff response, and could lead to instability of the surface soils and possible landslides. Therefore, the geotechnical constraints may preclude the ability to dedicate 10-percent of the site to retention and force this site into off-site compliance.

Staff Response to Comment Wallace – 9
The PCR methods for sizing retention facilities (Attachment D) optimize runoff infiltration while allowing for storage of the portion of runoff that does not infiltrate. The sizing methods are allowed for meeting the retention requirements, regardless of Watershed Management Zone. Therefore, through the compliance option provided in Attachment D, compliance is not limited only to infiltration in Watershed Management Zones 1, 5 and 8.

■ **Wallace Group – 10**
Feasibility is defined in the Requirements by limiting the land area dedicated to retention facilities to 10-percent of the site's "Equivalent Impervious Surface Area". However, the Requirements do not provide any scientific basis for the 10-percent value, or relate this value to the ability for a site to infiltrate. In addition, the 10-percent value is over double the 4-percent criteria used by numerous agencies in California, including the Contra Costa post-construction agencies and the City and County of San Diego.

Staff Response to Comment Wallace – 10
See Staff Response to Comment Goleta – 11 regarding the basis for the 10% value.
Some stormwater regulations allow for the use of a sizing factor of 4% of a site's tributary impervious surface area to determine the percentage of a site for dedication to biofiltration facilities. The sizing factor was calculated based on biofiltration facilities with specific runoff loading rates. For a unit area, 0.2 in/hr of rainfall (the SUSMP flow-based treatment standard) flowing to a biofiltration unit with a 5-in/hr loading rate, allows calculation of the BMP Area/Impervious Area ratio = 0.2/5 = 0.04, or 4%. The sizing factor is applied to BMPs intended for water quality treatment, not runoff reduction, for which the PCRs allow the 10% dedication.

As a *treatment* approach, the 4% sizing factor only accounts for runoff from impervious surfaces. Pervious surfaces (e.g., fertilized turf) can also generate pollutants; therefore, if biofiltration is being used to treat runoff, then the sizing factor should account for runoff, with a runoff coefficient applied, from pervious surfaces as well.

As a method for meeting *retention* requirements, the 4% sizing factor is flawed. First, the design associated with the 4% sizing factor includes retention via infiltration, temporary storage in a 1-foot gravel layer below an underdrain, and evapotranspiration. However, the underdrain located above the gravel layer releases all the collected runoff that is not retained. Once the runoff delivery rate to the biofiltration SCM exceeds the infiltration rate of the underlying native soil and the gravel layer and soil media pore spaces fill, runoff is discharged via the underdrain. Second, the 4% sizing factor has application only to biofiltration systems with the specified loading rate. By contrast, the 10% rule in the PCRs requires the optimization of retention-based Stormwater Control Measures, but does not prescribe the type of Stormwater Control Measures.

The 4% sizing factor approach does not guarantee accurate retention facility sizing and it does not guarantee protection of the full suite of watershed processes necessary for water quality and beneficial use protection.

■ **Wallace Group – 11**
Feasibility could also be concretely defined in the Requirements by limiting the total cost of compliance, for example by placing a cap on the cost of stormwater control measures to a percentage of overall project cost.

Examples:

- Limit requirement to the amount technically feasible: *"In cases where the facility has a defensible showing of technical infeasibility and can provide adequate documentation of site conditions or other factors that preclude full implementation of the performance design goal, the facility should still install stormwater practices to infiltrate, evapotranspire, and/or harvest and use onsite the maximum amount of stormwater technically feasible."* (EPA 841-B-09-001 Page 18).
- Measure practicability based on cost of compliance: *"Full implementation of the HMP will be considered impracticable if the combined construction cost of both required stormwater treatment and flow control measures exceeds 2% of the project construction cost".(* Santa Clara Valley Page 5-4)
- Infiltration exemption for tight soils: *If design infiltration rate is less than 0.25 inches per hour (measured rate of 0.50 inches per hour saturated), infiltration facilities are typically not approved as a means to meet flow control or water quality treatment requirements.* (City of Seattle Page 4-29)
- Infiltration exemption for tight soils and geotechnical and other hazards: *Sites with soils that do not infiltrate (less than 2.0 inches/hour saturated infiltration rate), unstable, soils, contamination or high risk of contamination, and wellhead protection areas are exempt from the total infiltration requirement.* (City of Portland Page 1-28)

<u>Summary of Recommendation</u>

- Provide an overall MEP clause
- Identify a criterion for infiltration rates that represent technical infeasibility
- Identify the site conditions where infiltration could lead to geotechnical or other hazards and exempt these sites from the retention requirement
- Provide specific cost-based feasibility limit (i.e. percentage of total project cost)
- Conduct a cost-benefit analysis for the 10% Equivalent Impervious Surface Area Requirement

Staff Response to Comment Wallace – 11
This comment highlights the challenges of, and varying options for, specifying explicit thresholds and values for determining technical feasibility. In the Draft PCRs, technical infeasibility categories are identified, and for some, thresholds are specified. Central Coast Water Board staff agrees that Permittees and project applicants would benefit from 'bright lines' and unambiguous criteria for making such determinations. However, Central Coast Water Board staff does not believe that specifying additional criteria is necessary to commence implementation, since we have observed that other municipal permittees in other regions of the

State have been able to proceed with virtually identical criteria to that included in the Draft PCRs.

Central Coast Water Board Staff does recognize implementation of post-construction requirements will be a new experience for many Permittees and staff intends to continue working closely with permittees and other stakeholders throughout implementation of the Draft PCRs to address issues of technical feasibility. The success of the process whereby the JERT developed an alternative sizing method for meeting retention requirements is a good indication that additional subjects and issues associated with implementation can be resolved through stakeholder collaboration with Central Coast Water Board staff. Until such time as specific criteria and thresholds are identified for consistent use throughout the Central Coast, Permittees must exercise discretion in making determinations of technical infeasibility while observing the intent of the Draft PCR Performance Requirements.

■ Wallace Group – 12
Page 14 Item C.2 Approved Watershed or Regional Plan

This Section does not include a proposed schedule for review and/or approval of proposals submitted to the Board. We recommend including language similar to item C.3.c. which includes a timeframe for review and approval or denial of applications.

Summary of Recommendation

- Include a specified timeframe for Water Board review and approval or denial of proposals for a Watershed or Regional Plan

Staff Response to Comment Wallace – 12

The Draft PCRs have been revised to accept the recommendation as follows:

"The Central Coast Water Board Executive Officer will deem complete a Permittee's Watershed or Regional Plan proposal within 60 days of receiving a complete proposal. The Central Coast Water Board Executive Officer will approve or deny the proposal within 120 days of a proposal being deemed complete."

■ Wallace Group – 13
Page 18 item F.2.e.i Reporting Requirements for Mitigation Projects.

This Section identifies that permittees will need to provide a description of "pollutant and flow reduction analyses (compiled from design specifications submitted by project applicants and approved by the Permittee)" comparing results of Alternative Compliance projects to the results that would otherwise have been achieved onsite. The Requirements for offsite compliance do not include an analysis of pollutant loading, nor does Performance Requirement 2 Water Quality Treatment require an analysis of pollutant removal. Therefore, it is not reasonable to assume that the permittee would have access to such information for annual reporting. We recommend modifying this section to remove reference to "pollutant analyses" and also include language to clarify the timeframe for which permittees must report on mitigation projects (other than O&M reporting which would be on-going).

Summary of Recommendation

- Modify Item F.2.e.i as follows "A summary description of **mitigation projects constructed during the reporting period** ~~pollutant and flow reduction analyses (compiled from design specifications submitted by the project applicants and approved by the Permittee)~~ comparing the expected aggregate results of Alternative Compliance

projects to the results that would have otherwise been achieved by meeting the numeric Performance Requirements on-site."

Staff Response to Comment Wallace – 13
In response to this comment, Central Coast Water Board staff modified PCR Section F.2.e.i. as recommended. The reporting requirements in Section F.2. are annual reporting requirements, so the Permittee should include the items in Section F. 2 for projects that were constructed during the reporting period.

■ **Wallace Group – 14**
Page 24 Attachment C, Definition of "Equivalent Impervious Surface Area"
This definition references a "surface's runoff coefficient" which could be interpreted multiple ways based on various hydrologic calculation methods. It is recommended to include a reference to Attachment E within the definition, which includes the stated "runoff coefficient".
Summary of Recommendation

- Include reference to Attachment E for definition of Equivalent Impervious Surface Area

Staff Response to Comment Wallace – 14
In response to this comment, Central Coast Water Board staff revised the definition for Equivalent Impervious Surface Area in Draft PCRs, Attachment C to include a reference to Attachment E.

■ **Wallace Group – 15**
Page 26 Attachment C, Definition of "Routine Road Maintenance"
This definition should be revised to include replacement of existing curb, gutter, and sidewalk to meet ADA or other requirements. In this case, the original line and grade of the sidewalk may be altered, and therefore is excluded from the current definition.
Summary of Recommendations

- Revise the definition of Routine Road Maintenance as follows: "includes pothole and square cut patching; overlaying **or replacing** existing asphalt or concrete with asphalt or concrete without expanding the area of coverage; shoulder grading; reshaping/regrading drainage systems; crack sealing; resurfacing with in-kind material without expanding the road prism or altering the original line and grade and/or hydraulic capacity of the road, **replacing existing curb, gutter, and/or sidewalk to meet current standards.**"

Staff Response to Comment Wallace – 15
The definition for Routine Road Maintenance specifies that if the project does not expand the road prism or alter the original line and grade and/or hydraulic capacity of the road then it qualifies as routine maintenance. Central Coast Water Board staff does not find it appropriate to add the term "replacing" of existing asphalt or concrete, because some replacement work could trigger the requirements. Central Coast Water Board staff finds that the installation of curbs, gutters, and/or sidewalks often provides an opportunity to improve stormwater management. These are installations of impervious surfaces so Central Coast Water Board staff does not find that these project components should receive a specific exemption.

■ **Wallace Group – 16**
Page 27 Attachment C, and Page 28 Attachment D, Definition of Tributary Area

This definition of Tributary Area is confusing, and conflicting with use of the same term in Attachment D. For example, the definition states that "Drainage Management Areas are smaller Tributary Areas that cumulatively make up the Tributary Area for the entire site." While in Attachment D, Item 1 states "*Tributary Area should be calculated for each individual Drainage Management Area*" and then follows with an equation where Tributary Area is based on the *Entire Project Area* minus pervious/infiltrating exceptions. Also, the term tributary area is typically used in hydrologic analyses to represent the entire area draining to a point, regardless of whether or not surfaces are pervious or impervious.

We recommend removing the definition for Tributary Area, and replacing this term with "Contributing Area" for descriptions related to post-construction requirements.

Summary of Recommendations:

- Remove the definition for Tributary Area from Attachment C
- Throughout the PCRs, replace the term "Tributary Area" with "Contributing Area"
- Modify the Attachment D definition of Tributary Area, as follows:

~~Tributary~~ **Contributing** Area = (~~Entire Project~~ **Drainage Management** Area) – (Undisturbed or Planted Areas)* - (Impervious Surface Areas that Discharge to Infiltrating Areas)**

Staff Response to Comment Wallace – 16

Central Coast Water Board staff recognizes that the term, "tributary area" has multiple applications in hydrology (e.g., area contributing runoff to a waterbody, area contributing runoff to a specific point on a development). The Draft PCRs define Tributary Area to clarify how the term applies for the Draft PCRs. Because tributary area can be applied differently, in different applications, Central Coast Water Board staff finds the application in the Draft PCRs of the term Tributary Area appropriate. To provide further clarification in response to the commenter's comment, Central Coast Water Board staff revised all references to Tributary Area in Section B.4, Glossary, and Attachment D to "Retention Tributary Area."

Central Coast Water Board staff amended the Glossary to include a definition for Tributary Area in response to JERT feedback; therefore, Central Coast Water Board staff proposes to retain the Glossary definition.

Lastly, Attachment D specifies that the tributary area should be calculated for each individual Drainage Management Area. The Tributary Area calculation is meant to be provided as a general calculation that will be applied to sub-areas of a Regulated Project site as appropriate. However, a Regulated Project will ultimately need to demonstrate it adhered to each applicable Performance Requirement for the entire project site.